SONY

4-459-705-**11**(1)

Interchangeable Lens Digital Camera

α58

α Handbook

A-mount

Preparing the camera

Shooting and viewing images

Shooting images to suit your subject

Using the shooting functions

Using the playback functions

Function list

Viewing images on a computer

Others

Advanced Operations

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α

SLT-A58

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Basic Operations

This section provides basic information on operating the camera. Read this section first. To use the camera even more effectively, see “Advanced Operations” (page 76).

Notes on using your camera

Shooting procedure

This camera has 2 modes for monitoring subjects: an LCD screen mode using the LCD screen, and a viewfinder mode using the viewfinder.

Notes on the functions available with the camera

To check whether it is a 1080 60i-compatible device or 1080 50i-compatible device, check for the following marks on the bottom of the camera.
1080 60i-compatible device: 60i
1080 50i-compatible device: 50i

No compensation for recorded content

The recorded content cannot be compensated for if recording or playback is not possible due to a malfunction of your camera or memory card, etc.

Back up recommendation

To avoid the risk of data loss, always copy (back up) data to other media.

Notes on the LCD screen, electronic viewfinder, lens, and image sensor

- The LCD screen and electronic viewfinder are manufactured using extremely high-precision technology, so over 99.99% of the pixels are operational for effective use. However, there may be some tiny black points and/or bright points (white, red, blue or green in color) that constantly appear on the LCD screen and electronic viewfinder. These points are normal in the manufacturing process and do not affect the images in any way.
- Do not hold the camera by the LCD screen.
- Do not expose the camera to sunlight or shoot toward the sun for extended periods of time. The internal mechanism may be damaged. If reflected sunlight is focused on a nearby object, it may cause a fire.
- There is a magnet on the back and around the rotating shaft of the hinge of the LCD screen. Do not bring anything that is easily affected by a magnet, such as floppy disks or credit cards, near the LCD screen.
- Images may trail across on the screen in cold locations. This is not a malfunction. When turning on the camera in a cold location, the screen may become temporarily dark. When the camera warms up, the screen will function normally.
- The recorded image may differ from the image you monitor before recording.

Notes on recording over extended periods of time

- When you continue to shoot for a long time, the temperature of the camera rises. If the temperature reaches a certain level, the [ ] icon appears on the screen and the camera turns off automatically. If the power is turned off, leave the camera for 10 minutes or longer to allow the temperature inside the camera to decrease to a safe level.
- Under high ambient temperatures, the temperature of the camera rises quickly.
- When the temperature of the camera rises, the image quality may deteriorate. We recommend that you wait until the temperature of the camera drops before continuing to shoot.
- The surface of the camera may grow warm. This is not a malfunction.

Notes on importing AVCHD movies to a computer

When importing AVCHD movies to a computer, for Windows computers, use the "PlayMemories Home" software.

Notes on playing movies on other devices

- This camera uses MPEG-4 AVC/H.264 High Profile for AVCHD format recording. Movies recorded in AVCHD format on this camera cannot be played using the following devices.
  - Other devices compatible with AVCHD format that do not support High Profile
  - Devices incompatible with the AVCHD format

  This camera also uses MPEG-4 AVC/H.264 Main Profile for MP4 format recording. For this reason, movies recorded in MP4 format on this camera cannot be played on devices other than those that support MPEG-4 AVC/H.264.
- Discs recorded in HD image quality (high definition) can be played back only on AVCHD format-compatible devices. DVD-based players or recorders cannot play back HD image quality discs, as they are incompatible with the AVCHD format. Also, DVD-based players or recorders may fail to eject HD image quality discs.

Warning on copyright

Television programs, films, videotapes, and other materials may be copyrighted. Unauthorized recording of such materials may be contrary to the provisions of copyright laws.

The pictures used in this manual

The photographs used as examples of pictures in this manual are reproduced images, and are not actual images shot using this camera.

On the data specifications described in this manual

The data on performance and specifications are defined under the following conditions, except as described in this manual: at an ordinary ambient temperature of 25ºC (77°F), and using a battery pack that has been fully charged for about an hour after the charge lamp has turned off.

Model name

This manual covers several models supplied with different lenses.
The model name varies depending on the supplied lens. The available model varies depending on the country/region.

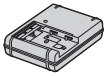
Model name	Lens
SLT-A58K	DT18-55mm
SLT-A58M	DT18-135mm
SLT-A58Y	DT18-55mm and DT55-200mm

Checking the supplied items

First check the model name of your camera (page 11). The accessories supplied differ depending on the model.
The number in parentheses indicates the quantity.

Supplied with all models

- Camera (1)
- Battery charger BC-VM10A (1)

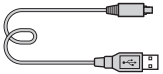


- Power cord (mains lead) (1)* (not supplied in the U.S.A. and Canada)

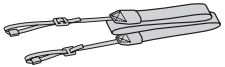
* Multiple power cords may be supplied with your camera. Use the appropriate one that matches your country/region.

- Rechargeable battery pack NP-FM500H (1)

- Micro USB cable (1)



- Shoulder strap (1)



- Body cap (1) (Attached to the camera)

- Eyepiece cup (1) (Attached to the camera)
- Instruction Manual (1)

SLT-A58K

- DT18-55mm zoom lens (1)/Front lens cap (1)/Packaging lid (1)

SLT-A58M

- DT18-135mm zoom lens (1)/Front lens cap (1)/Rear lens cap (1)/Lens hood (1)

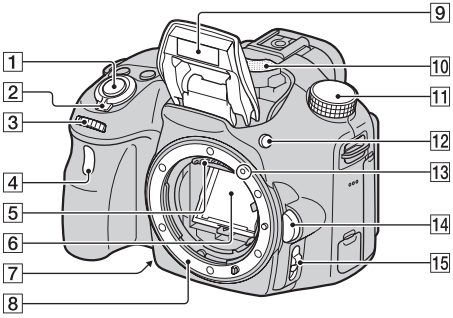
SLT-A58Y

- DT18-55mm zoom lens (1)/Front lens cap (1)/Packaging lid (1)
- DT55-200mm zoom lens (1)/Front lens cap (1)/Rear lens cap (1)/Lens hood (1)

Identifying parts

See the pages in parentheses for details on operation for the parts.

Front



1 Shutter button (30)

2 Power switch (27)

3 Control dial (92, 94, 96)

4 Self-timer lamp (144)

5 Lens contacts*

6 Mirror*

- This mirror is made of a transmissive film. Do not touch the mirror. Doing so may soil or deform the mirror, and the image quality and camera performance may deteriorate.

7 Preview button (94)/Focus Magnifier button (116)

8 Mount

9 Built-in flash* (41, 126)

10 Microphone** (105)

11 Mode dial (36)

12 ϟ (Flash pop-up) button (41, 126)

13 Mounting index (24)

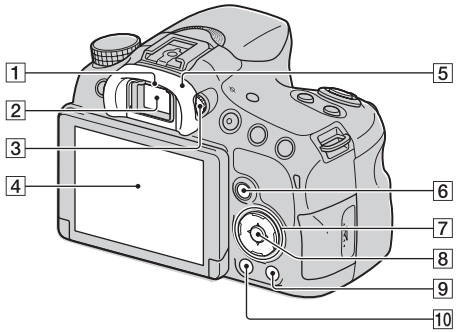
14 Lens release button (25)

15 Focus mode switch (106, 114)

*** Do not directly touch these parts.**

**** Do not cover this part during movie recording. Doing so may cause noise or lower the volume.**

Back



1 Eyepiece sensors (77)

2 Viewfinder*

- When you look into the viewfinder, viewfinder mode is activated, and when you move your face away from the viewfinder, viewing mode returns to LCD screen mode.

3 Diopter-adjustment dial (29)

4 LCD screen (71, 80, 147)

5 Eyepiece cup (77)

6 For shooting: Fn (Function) button (52, 53)
For viewing: (Image rotation) button (149)

7 Control button ▲/▼/◀/▶/DISP (Display Contents) (46, 147)/WB (White Balance) (136)/ / (Drive Mode) (45, 143)/ (Picture Effect) (133)

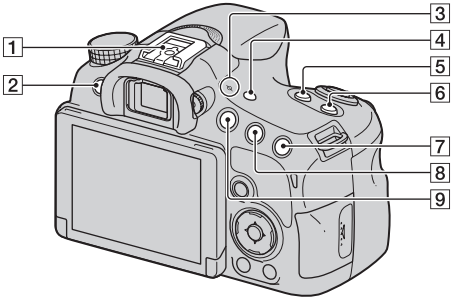
8 Control button (Enter)/AF button (110)/Lock-on AF button (111)

9 ? (In-Camera Guide) button (62)
For viewing: (Delete) button (34)

10 ▶ (Playback) button (33)

* **Do not directly touch this part.**

Top



1 Multi interface shoe[1)2)] (127)

2 MENU button (55)

3 ⊖ Image sensor position mark (108)

4 FINDER/LCD button (164)

5 ZOOM button (140)

6 ISO button (129, 162)

7 For shooting: ± (Exposure) button (43)/AV (Aperture value) button (96)
For viewing: ⊕ (Zoom in) button (48)

8 For shooting: AEL (AE lock) button (122, 161)
For viewing: ⊖ (Zoom out) button (48)/▪ (Image index) button (49)

9 MOVIE button (32, 100)

1) For details on compatible accessories for the Multi interface shoe, visit the Sony web site, or consult a Sony dealer or local authorized Sony service facility in your area. Accessories for the Accessory Shoe can also be used. Operation with other manufactures' accessories is not guaranteed.

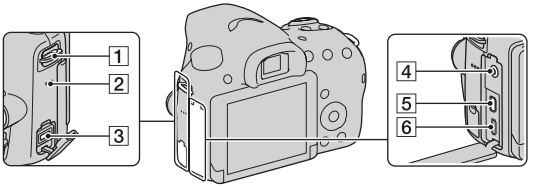
Multi Interface Shoe

Accessory Shoe

2) Accessories for the Auto-lock Accessory Shoe can also be attached using the Shoe Adaptor (sold separately).

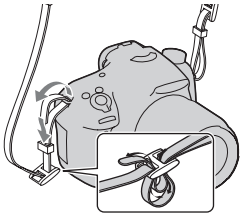
Auto-lock Accessory Shoe

Sides/Bottom



1 Hooks for shoulder strap

- Attach both ends of the strap to the camera.



2 Speaker

3 DC IN terminal

- When connecting the AC-PW10AM AC Adaptor (sold separately) to the camera, turn the camera off, then plug the connector of the AC Adaptor into the DC IN terminal on the camera.

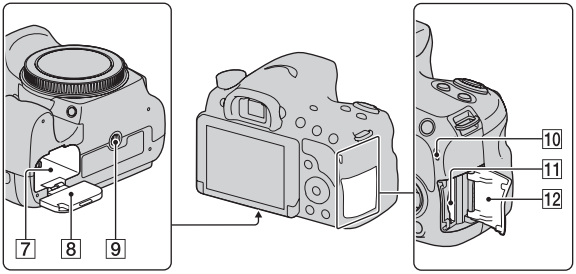
4 (Microphone) jack

- When an external microphone is connected, the internal microphone is automatically turned off. If the external microphone is a plug-in-power type, the power of the microphone is supplied by the camera.

5 HDMI micro jack (50, 155)

6 Multi/Micro USB Terminal (178)

- Supports Micro USB compatible device.



7 Battery insertion slot (21)

8 Battery cover (21)

9 Tripod receptacle

- Use a tripod with a screw length of less than 5.5 mm (7/32 inch). You will be unable to firmly secure the camera to tripods with a screw length of 5.5 mm (7/32 inch) or longer, and attempting to do so may damage the camera.

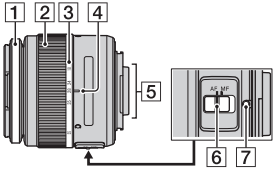
10 Access lamp (22)

11 Memory card insertion slot (21)

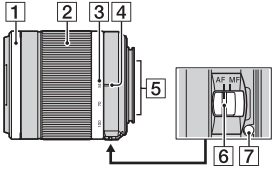
12 Memory card cover (21)

Lens

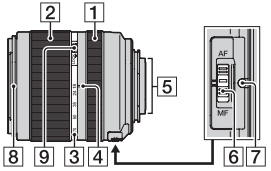
DT 18-55mm F3.5-5.6 SAM II (Supplied with the SLT-A58K/ A58Y)



DT 55-200mm F4-5.6 SAM (Supplied with the SLT-A58Y)



DT 18-135mm F3.5-5.6 SAM (Supplied with the SLT-A58M)



1 Focusing ring

2 Zoom ring

3 Focal-length scale

4 Focal-length index

5 Lens contacts

6 Focusing mode switch

7 Mounting index

8 Lens hood index

9 Zoom lock switch

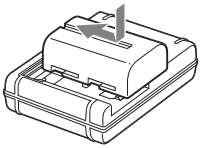
- The DT 18-55mm F3.5-5.6 SAM II/DT 55-200mm F4-5.6 SAM/ DT 18-135mm F3.5-5.6 SAM are designed for Sony A-mount cameras (models equipped with an APS-C sized image sensor). You cannot use these lenses on 35mm-format cameras.
- For lenses other than DT 18-55mm F3.5-5.6 SAM II/DT 55-200mm F4-5.6 SAM/DT 18-135mm F3.5-5.6 SAM, refer to the operating instructions supplied with the lens.

Charging the battery pack

When using the camera for the first time, be sure to charge the NP-FM500H “InfoLITHIUM” battery pack (supplied).
The “InfoLITHIUM” battery pack can be charged even when it has not been fully depleted. The battery pack can also be used when it has not been fully charged.
The charged battery pack is discharged little by little, even when you do not use it. To avoid missing an opportunity to shoot, charge the battery pack again before you shoot.

1 Insert the battery pack into the battery charger.

Push the battery pack in until it clicks.



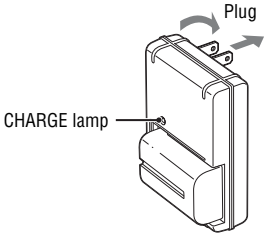
2 Connect the battery charger to a wall outlet (wall socket).

Light on: Charging
Light off: Charge completed

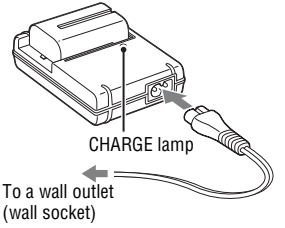
Charging time	About 175 minutes

- When charging a fully depleted battery pack at a temperature of 25°C (77°F).
- The CHARGE lamp turns off when charging is completed.

For the U.S.A. and Canada



For countries/regions other than the U.S.A. and Canada

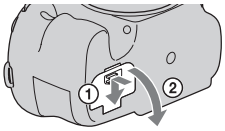


Notes

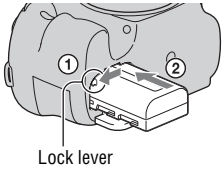
- The charging time differs depending on the remaining capacity of the battery pack or charging conditions.
- We recommend charging the battery pack in an ambient temperature of between 10°C to 30°C (50°F to 86°F). You may not be able to efficiently charge the battery pack outside of this temperature range.
- Connect the battery charger to the nearest wall outlet (wall socket).

Inserting the battery pack/memory card (sold separately)

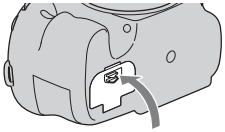
1 **Open the battery cover by sliding the lever.**



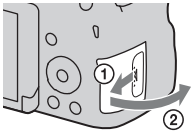
2 **Insert the battery pack completely, using the tip of the battery to press the lock lever.**



3 **Close the cover.**

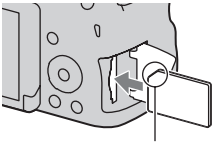


4 **Slide and open the memory card cover.**



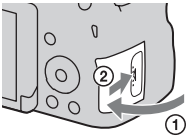
5 Insert a memory card.

- With the notched corner facing in the direction shown, insert the memory card until it clicks into place.



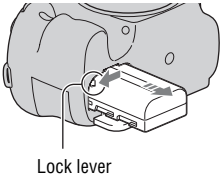
Ensure that the notched corner faces the correct direction.

6 Close the cover.



To remove the battery pack

Turn off the camera and check that the vibration of the camera has stopped and that both the LCD screen and access lamp (page 17) are turned off. Then, slide the lock lever in the direction of the arrow to remove the battery pack. Be careful not to drop the battery pack.



Lock lever

To remove the memory card

Make sure that the access lamp is not lit, then open the cover and push the memory card once.

To check the remaining battery level

The supplied battery pack is a lithium-ion battery pack that can exchange information related to operating conditions with your camera. The remaining battery time in percent figures is displayed according to the operating conditions of your camera.

Battery level						**"Battery exhausted."**
	High ⟶ Low					You cannot shoot any more pictures.

Memory cards that you can use

The following memory cards are compatible with this camera. However, all memory cards are not guaranteed to work with this camera.

Types of memory card	Still images	Movies	In this manual
Memory Stick PRO Duo	✓	✓ (Mark2)	Memory Stick PRO Duo
Memory Stick PRO-HG Duo	✓	✓	
Memory Stick XC-HG Duo	✓	✓	Memory Stick XC Duo
SD memory card	✓	✓ (Class 4 or faster)	SD card
SDHC memory card	✓	✓ (Class 4 or faster)	
SDXC memory card	✓	✓ (Class 4 or faster)	

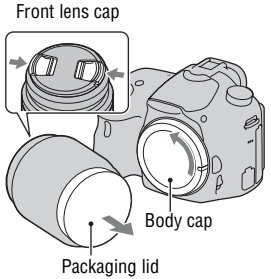
Notes

- Images recorded on a "Memory Stick XC-HG Duo" media or an SDXC memory card cannot be imported to or played on computers or AV devices that are not compatible with exFAT. Make sure that the device is compatible with exFAT before connecting it to the camera. If you connect your camera to an incompatible device, you may be prompted to format the card. Never format the card in response to this prompt, as doing so will erase all data on the card. (exFAT is the file system used on "Memory Stick XC-HG Duo" media or SDXC memory cards.)

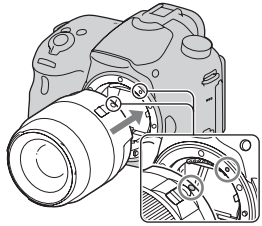
Attaching a lens

1 Remove the body cap from the camera and the packaging lid from the rear of the lens.

- Quickly change the lens somewhere away from dusty locations so as to keep dust or debris from getting inside the camera.
- When shooting, remove the front lens cap from the front of the lens.

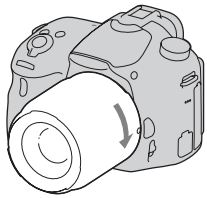


2 Mount the lens by aligning the orange index marks (mounting indexes) on the lens and camera.



3 Turn the lens clockwise until it clicks into the locked position.

- Be sure to put the lens on straight.

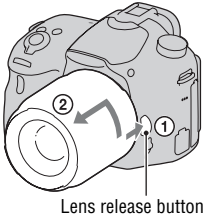


Notes

- When attaching a lens, do not press the lens release button.
- Do not use force when attaching a lens.
- E-mount lenses are not compatible with this camera.
- When using a lens equipped with a tripod socket, attach the socket on the lens side to the tripod to maintain balance.
- When carrying the camera with a lens attached, hold both the camera and the lens firmly.
- Do not hold the part of the lens that is extended for zoom or focus adjustments.

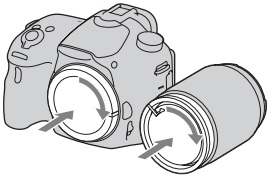
To remove the lens

1 Press the lens release button all the way in and turn the lens counterclockwise until it stops.

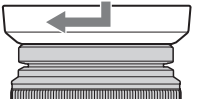


2 Attach the caps to the front and rear of the lens and the body cap to the camera.

- Before you attach the caps, remove any dust.
- A rear lens cap is not supplied with the DT 18-55mm F3.5-5.6 SAM II Lens Kit. If storing the lens without attaching it to the camera, purchase Rear Lens Cap ALC-R55.



To attach a lens hood



It is recommended that you use a lens hood to reduce flare and ensure optimum image quality.
Fit the hood into the mount on the end of the lens barrel and rotate the hood clockwise until it clicks.

Notes

- A lens hood is not supplied with the DT 18-55mm F3.5-5.6 SAM II. You can use the ALC-SH108 (sold separately).
- The lens hood may block the light of the flash. Remove the lens hood when using the flash.
- When storing, turn over the lens hood and place it onto the lens backwards.

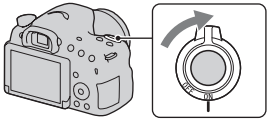
Note on changing the lens

When changing the lens, if dust or debris gets inside the camera and adheres to the surface of the image sensor (the part that converts light to electric signal), it may appear as dark spots on the image, depending on the shooting environment.
The image sensor is equipped with an anti-dust function to prevent dust from landing on the image sensor. However, attach or remove the lens quickly somewhere away from dusty locations.

Turning on the camera and setting the clock

When you turn on the camera for the first time, the date/time setup screen appears.

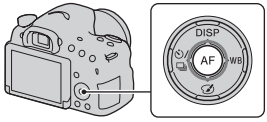
1 Set the power switch to ON to turn on the camera.



The screen to set date and time appears.

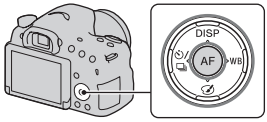
- To turn off the camera, set the power switch to OFF.

2 Check that [Enter] is selected on the LCD screen, then press the center of the control button.



3 Select your area using ◄/► on the control button, then press the center of the control button.

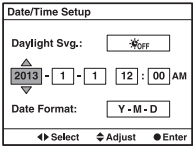
4 Select each item using ◄/► and set the numeric value using ▲/▼.



[Daylight Svg.:]: Turns on or off the daylight saving time setting.

[Date Format:]: Selects the format for displaying the date.

- Midnight is indicated as 12:00 AM, and noon as 12:00 PM.



5 Repeat step 4 to set other items, then press the center of the control button.

6 Check that [Enter] is selected, then press the center of the control button.

To cancel the date/time setting operation
Press the MENU button.

To set the date/time again
The date/time setup screen appears automatically only when you turn the camera on for the first time. To set the date and time again, use the menu.

MENU button → 1 → [Date/Time Setup]

To set the area again
You can set the area where you are using the camera. This allows you to set the local area when you use the camera abroad.

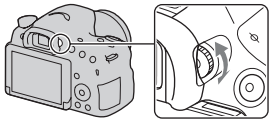
MENU button → 1 → [Area Setting]

Maintaining the date and time setting
This camera has an internal rechargeable battery to maintain the date and time and other settings regardless of whether the power is on or off or the battery is installed (page 201).

Before shooting

Adjusting the viewfinder's visual acuity (diopter adjustment)

Adjust the diopter-adjustment dial to your eyesight until the display appears clearly in the viewfinder.



Notes

- The dioptric adjustment attachment (sold separately) cannot be used with this camera.

Holding the camera properly

Stabilize your upper body and take a position that keeps the camera from moving.

In LCD screen mode

In viewfinder mode

In viewfinder mode (vertical position)

Point ①
Hold the camera with one hand, and support the lens with the other.

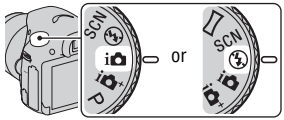
Point ②
Take a secure stance with your feet shoulder-width apart.

Point ③
Lightly tuck your elbows against your body. When shooting in a kneeling position, steady your upper body by placing your elbow on your knee.

Shooting still images

In [Intelligent Auto] mode, the camera analyzes the subject and allows you to shoot with the appropriate settings.
Select ⚡ when shooting in a location where flash use is restricted.

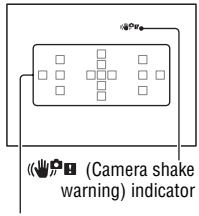
1 Set the mode dial to i📷 (Intelligent Auto) or ⚡ (Flash Off).



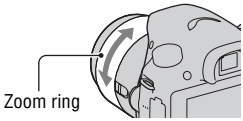
2 Hold the camera, monitoring your shot using the LCD screen or viewfinder.

3 Overlay the AF area on the desired subject.

- If the (Camera shake warning) indicator flashes, carefully shoot the subject, holding the camera steady or using a tripod.
- When the camera recognizes the scene, the Scene Recognition icon appears on the screen and suitable settings for that scene will be used.

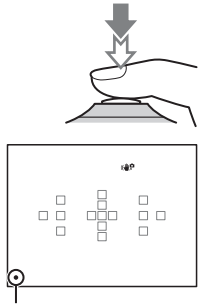


4 When using a zoom lens, turn the zoom ring, then decide on your shot.



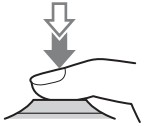
5 Press the shutter button halfway down to focus.

When the focus is confirmed, ● or ((◉)) (Focus indicator) lights up (page 107).



Focus indicator

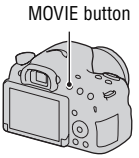
6 Press the shutter button fully down to shoot.



- When [Auto Object Framing] is set to [Auto] and the camera shoots faces, close-ups, or subjects tracked by [Lock-on AF], the camera automatically trims the image into a suitable composition. Both the original and the trimmed images are saved (page 119).

Recording movies

1 Press the MOVIE button to start recording.



- Movie recording can be started from any exposure mode.
- The shutter speed and aperture are adjusted automatically. If you want to set them to particular values, set the mode dial to (Movie) (page 102).
- The camera continues to adjust the focus when it is in autofocus mode.

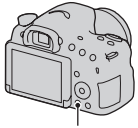
2 Press the MOVIE button again to stop recording.

Notes

- The sound of the camera and the lens in operation may be recorded while recording a movie. You can disable sound recording by setting [Audio Recording] to [Off] (page 105).
- The continuous recording time of a movie may be shorter, depending on the ambient temperature or the status of the camera. See “Notes on continuous movie recording.”
- When the [] icon appears, the temperature of the camera is too high. Turn the camera off and wait until the temperature of the camera drops (page 199).

Playing back images

1 Press the ▶ button.



2 MENU button → ▶ 1 → [Still/Movie Select] → Select the desired mode

- To play back still images, select [Folder View(Still)], and to play back movies, select [Folder View(MP4)] or [AVCHD View], depending on the file format.

3 Select an image using ◀/▶ on the control button.

- To play back movies, press the center of the control button.

During movie playback	Control button/control dial operation
To pause/resume	●
To fast-forward	▶
To fast-reverse	◀
To slow-forward	Rotate the control dial to the right during pause.
To slow-reverse	Rotate the control dial to the left during pause. • The movie is played back frame-by-frame.
To adjust sound volume	▼ → ▲/▼
To display the information	▲

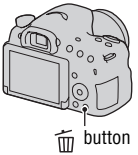
Notes

- Movies recorded using other devices may not play back on this camera in some cases.

Deleting images (Delete)

Once you have deleted an image, the image cannot be restored. Be sure that you do not want the image before deleting it.

1 Display the image you want to delete and press the 🗑 button.



2 Select [Delete] using ▲ on the control button, then press the center of the control button.

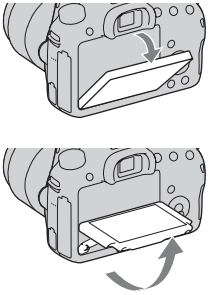
Notes

• Protected images cannot be deleted.

Adjusting the angle of the LCD screen

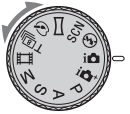
Adjust the LCD screen to an easily viewable angle.

- The LCD screen tilts down about 55 degrees and up about 135 degrees.



Selecting a shooting mode

Set the mode dial to the desired shooting mode.



The following shooting modes are available:

(Intelligent Auto)/ (Flash Off) (30, 85)	In [Intelligent Auto] mode, the camera analyzes the subject and allows you to shoot with the appropriate settings. Select [Flash Off] when you want to shoot without the flash.
(Superior Auto) (37, 85)	The camera recognizes and evaluates the shooting conditions, and appropriate settings are set automatically. The camera saves 1 appropriate image by combining or extracting images, as necessary.
SCN (Scene Selection) (38, 86)	Allows you to shoot with preset settings according to the scene.
(Sweep Panorama) (39, 88)	Allows you to shoot panoramic images.
(Picture Effect) (133)	Allows you to shoot still images with a texture unique to the selected effect.
(Tele-zoom Cont. Priority AE) (40, 90)	The camera continues to shoot while the shutter button is pressed fully down. The camera records images continuously at a maximum of about 8 images per second.
(Movie) (32, 100)	Allows you to shoot movies with the exposure (both the shutter speed and the aperture value) adjusted manually.
P (Program Auto) (91)	Allows you to shoot with the exposure (both the shutter speed and the aperture value) adjusted automatically. The other settings can be adjusted manually.
A (Aperture Priority) (92)	Allows you to shoot after adjusting the aperture value manually using the control dial.
S (Shutter Priority) (94)	Allows you to shoot after adjusting the shutter speed manually using the control dial.
M (Manual Exposure) (96)	Allows you to shoot after adjusting the exposure (both the shutter speed and the aperture value) manually using the control dial.

iA+ Superior Auto

1 Set the mode dial to iA+ (Superior Auto).

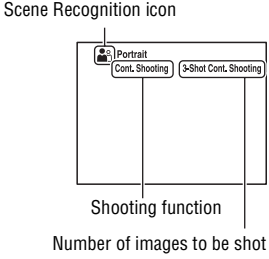
2 Point the camera towards the subject, and adjust the focus and shoot the subject.

Scene recognition

When the camera recognizes the subject and adjusts itself for shooting conditions, the following information appears on the screen: Scene Recognition icon, appropriate shooting function, and the number of images to be shot.

Recognized scene: (Night Scene), (Hand-held Twilight), (Landscape), (Backlight Portrait), (Portrait), (Tripod Night Scene), (Backlight), (Macro), (Night Portrait), (Spotlight), (Low Brightness), (Baby)

Shooting function: Cont. Shooting, Slow Sync. (pages 41, 126), Auto HDR (page 130), Daylight Sync., Slow Shutter, Hand-held Twilight (page 87)



SCN Scene Selection

1 Set the mode dial to SCN (Scene Selection), then press the center of the control button.

2 Select the desired mode using ▲/▼, then press the center of the control button.

- To change the scene, press the Fn button, then select another scene.

3 Adjust the focus and shoot the subject.

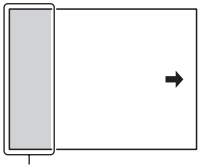
(Portrait)	Blurs away backgrounds and sharpens the subject. Accentuates skin tones softly.
(Sports Action)	Shoots a moving subject at a fast shutter speed so that the subject looks as if it is standing still. The camera shoots images continuously while the shutter button is pressed.
(Macro)	Shoots close-ups of the subjects such as flowers and foods.
(Landscape)	Shoots the entire range of scenery in sharp focus with vivid colors.
(Sunset)	Shoots the red of the sunrise or sunset beautifully.
(Night Scene)	Shoots night scenes at a distance without losing the dark atmosphere of the surroundings.
(Hand-held Twilight)	Shoots night scenes with less noise and blur without using a tripod. A burst of shots are taken, and image processing is applied to reduce subject blur, camera shake, and noise.
(Night Portrait)	Shoots portraits in night scenes.

Sweep Panorama

1 **Set the mode dial to (Sweep Panorama).**

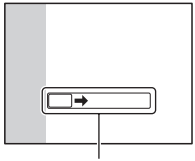
2 **Point the camera at the subject for which you want to adjust the brightness and focus, and press the shutter button halfway down.**

3 **Point the camera at the edge of the composition while pressing the shutter button halfway down, and then press the shutter button fully down.**



This part will not be shot.

4 **Pan or tilt the camera to the end, following the guidance on the screen.**



Guidance bar

Tele-zoom Cont. Priority AE

1 Set the mode dial to (Tele-zoom Cont. Priority AE).

2 Adjust the focus and shoot the subjects.

- The camera continues to shoot while the shutter button is pressed fully down.
- The center area on the screen is cropped and the camera records the images continuously at a maximum of about 8 images per second.
- The minimum zoom scale of the camera is set to 2 times and the image size is set to S.

Shooting techniques

- When [AEL w/ shutter] is set to [Off], the camera continues to adjust the exposure even after the first shot in [Cont. Shooting] or [Tele-zoom Cont. Priority AE] (page 123).
- When [Autofocus Mode] is set to [Continuous AF], the camera continues to adjust focus during shooting. You can set [ISO] to the desired number.

Using the flash

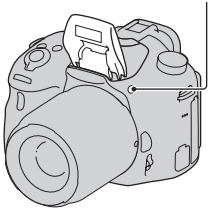
In dark environments, use the flash to shoot the subject brightly and to prevent camera shake. When shooting against the sun, use the flash to lighten the image of the backlit subject.

1 Fn button → ϟ (Flash Mode) → Select the desired setting

- For further information on the flash modes available for each shooting mode, see page 75.

2 Press the ϟ button.

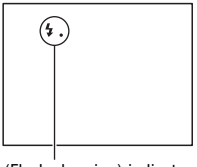
ϟ button



The built-in flash pops up.

- In [Intelligent Auto], [Superior Auto], or [Scene Selection] mode, the built-in flash does not pop up even if you press the ϟ button. In these modes, the flash automatically pops up if the amount of light is insufficient or the subject is backlit.

3 After the flash has finished charging, shoot the subject.



ϟ● (Flash charging) indicator

ϟ● Blinking: The flash is being charged. While the indicator is blinking, you cannot trigger the shutter.

ϟ● Lit: The flash has been charged and is ready to fire.

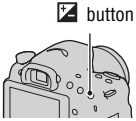
- When you press the shutter button halfway down under dark lighting in autofocus mode, the flash may be fired to help focus on a subject (AF Illuminator).

(Flash Off)	Does not fire even if the flash is raised. • You cannot select this item when the mode dial is set to P, A, S, or M. If you do not want to use the flash in these modes, push the flash down.
(Autoflash)	Fires in dark environments or when shooting towards bright light.
(Fill-flash)	Fires every time you trigger the shutter.
(Slow Sync.)	Fires every time you trigger the shutter. Slow sync shooting allows you to shoot a clear image of both the subject and the background by slowing the shutter speed.
(Rear Sync.)	Fires right before the exposure is completed every time you trigger the shutter.
(Wireless)	Fires an external flash (sold separately) that is off the camera and away from it (wireless flash shooting).

Adjusting the image brightness

Normally, the exposure is automatically selected (Automatic exposure). Based on the exposure acquired by the automatic exposure, you can perform exposure compensation. You can make the entire image brighter by shifting to the + side. The entire image becomes darker when you shift to the – side (Exposure compensation).

1 Press the button.

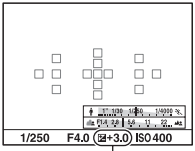


2 Adjust the exposure using the control dial.

Toward + (over): Brightens an image.
Toward – (under): Darkens an image.

- In viewfinder mode, confirm the exposure using the EV scale.

The LCD screen after the exposure is adjusted.



Compensated exposure

The screen in the viewfinder

Standard exposure

3 Adjust the focus and shoot the subject.

Shooting techniques

- Adjust the compensation level by checking the recorded image.
- Using bracket shooting, you can shoot multiple images with the exposure shifted to the plus or minus sides (page 144).

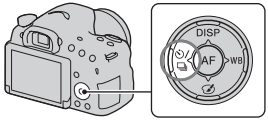
Notes

- This item cannot be set when the exposure mode is set to [Intelligent Auto], [Superior Auto], or [Scene Selection].
- When the exposure mode is set to M, the exposure can be adjusted only when [ISO] is set to [AUTO]. Turn the control dial during AE lock to adjust the compensation value.
- Even though you can adjust the exposure between –3.0 EV and +3.0 EV, only a value between –2.0 EV and +2.0 EV with the equivalent image brightness appears on the screen when shooting. If you set an exposure beyond this range, the image brightness on the screen does not show the effect, but it will be reflected on the recorded image.

Selecting the drive mode

You can select the appropriate drive mode, such as single, continuous, or bracket shooting, to suit your purpose.

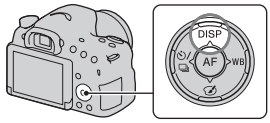
/ on the control button → Select the desired mode

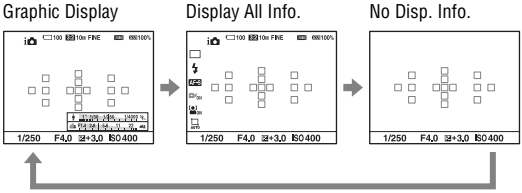


(Single Shooting) (143)	This mode is for normal shooting.
(Cont. Shooting) (143)	The camera records images continuously.
(Self-timer) (144)	The 10-second self-timer is convenient if the photographer wants to appear in the photo, while the 2-second self-timer is convenient for reducing the camera shake.
BRK C (Bracket: Cont.) (144)	You can shoot 3 images, each with different degrees of exposure.
BRK S (Single Bracket) (144)	You can shoot 3 images, shot by shot, each with different degrees of exposure.
BRK WB (WB bracket) (146)	Based on the selected white balance and the color temperature/color filter, 3 images are recorded with the white balance shifted.

Switching the recording information display (DISP)

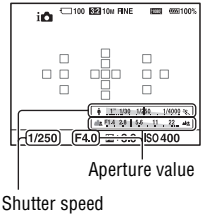
Each time you press DISP on the control button, the recording information display changes as follows.
You can set the recording information display separately for viewfinder mode and LCD screen mode.





Graphic Display

[Graphic Display] shows the shutter speed and aperture value as graphs, and clearly illustrates how the exposure works. The pointers on the shutter speed indicator and aperture indicator indicate the current value.



Setting image size

Image Size

MENU button → 1 → [Image Size] → Select the desired size

[Aspect Ratio]: [3:2]

Image size		Usage guidelines
L: 20M	5456 × 3632 pixels	For shooting at the highest image quality
M: 10M	3872 × 2576 pixels	For prints up to A3+ size
S: 5.0M	2736 × 1824 pixels	For prints up to A5 size

[Aspect Ratio]: [16:9]

Image size		Usage guidelines
L: 17M	5456 × 3064 pixels	For viewing on a high-definition TV
M: 8.4M	3872 × 2176 pixels	
S: 4.2M	2736 × 1536 pixels	

Notes

- When [Quality] is set to [RAW] or [RAW & JPEG], the image size of the RAW image corresponds to L. This size is not displayed on the screen.

Panorama: Size

You can set the image size for panoramic images. The image size varies depending on the setting of the shooting direction (page 89).

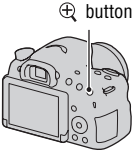
MENU button → 1 → [Panorama: Size] → Select the desired size

Standard	[Panorama: Direction] is set to [Up] [Down]: 3872 × 2160 [Panorama: Direction] is set to [Right] [Left]: 8192 × 1856
Wide	[Panorama: Direction] is set to [Up] [Down]: 5536 × 2160 [Panorama: Direction] is set to [Right] [Left]: 12416 × 1856

Enlarging images

A still image can be enlarged for closer examination. This is convenient for checking the focus condition of a recorded image.

1 Display the image you want to enlarge, then press the ⊕ button.



2 Zoom the image in or out using the ⊕ button or ⊖ button.

- Rotate the control dial to switch images at the same magnification. When you shoot multiple images with the same composition, you can compare their focus conditions.

3 Select the portion you want to enlarge using ▲/▼/◀/► on the control button.

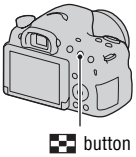
To cancel the enlarged playback

Press the center of the control button and the image returns to normal size.

Switching to the image list display

You can display multiple images on the screen simultaneously.

Press the button.



The image index screen is displayed.

- You can select the number of images displayed on one page of the image index screen using [Image Index] in the Playback menu.

To return to the single-image screen

Press the center of the control button after selecting the desired image.

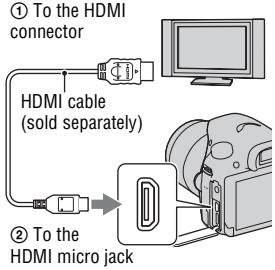
To display the desired folder

Select the bar on the left of the image index screen using the control button, then select the desired folder using ▲/▼. Press the center of the control button while the bar is selected to switch the view mode.

Viewing images on a TV screen

To view images that were recorded on the camera on a TV set, an HDMI cable (sold separately) and an HD TV equipped with an HDMI connector are required (page 155).

1 Turn off both your camera and the TV, and connect the camera to the TV.



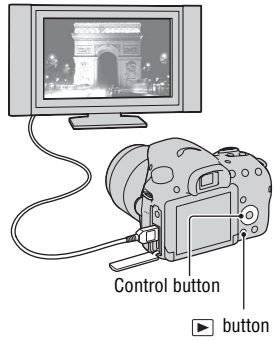
2 Turn on the TV and switch the input.

- See also the operating instructions supplied with the TV.

3 Turn on the camera, and press the ▶ button.

Images shot using the camera appear on the TV screen.
Select the desired image using ◀/▶ on the control button.

- The LCD screen on the camera does not turn on.



Functions that can be operated using the buttons/switch

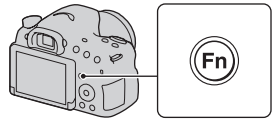
You can set up or operate various functions using the buttons/switch.
For the location of the buttons/switch, see “Identifying parts” (page 13).

button (41, 126)	Pops the flash up.
button (43)/AV button (96)/ button (48)	Adjusts the exposure./Sets up the aperture value./Scales an image up when viewing images.
ISO button (129)	Adjusts the ISO sensitivity.
FINDER/LCD button (164)	Switches the display between the LCD screen and the viewfinder.
MENU button (55)	Displays the menu screen for setting up the menu item.
MOVIE button (32, 100)	Records movies.
AEL button (122)/ button (49)/ button (48)	Fixes the exposure of the entire screen./Displays multiple images on the screen simultaneously./Scales down an image that has been scaled up when viewing images.
ZOOM button (140)	Magnifies and shoots the subject using the zoom feature of the camera.
Fn button (52, 53)/ button (149)	Displays the setup screen for a function set using the Fn button./Rotates images.
Control button	Sets up the following functions: Display Contents (46, 78, 147), White Balance (136), Drive Mode (45, 143), Picture Effect (133), and Autofocus (110).
button (33)	Plays back images.
? button (62)/ button (34)	Displays a shooting tip or In-Camera Guide./Deletes images.
Focus mode switch (106, 114)	Switches the autofocus and manual focus.
Preview button (94)/Focus Magnifier button (116)	Checks blurring of the background./Allows you to check the focus by enlarging the image before shooting.

Selecting a function using the Fn (Function) button

This button is used for setting up or executing functions used frequently in shooting.

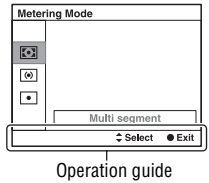
1 Press the Fn button.



2 Select the desired item using ▲/▼/◄/► on the control button, then press the center ● to execute.

The setup screen appears.

3 Following the operation guide, select and execute the desired function.



To set up the camera directly from the recording information screen

Turn the control dial without pressing the center ● in step 2. You can set up the camera directly from the recording information screen.

Functions that can be selected using the Fn (Function) button

The functions that can be selected using the Fn button are as follows:

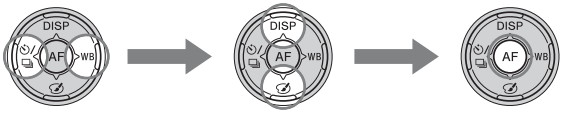
Scene Selection (38, 86)	Selects an appropriate mode from among the Scene Selection preset settings to suit shooting conditions. (Portrait/Sports Action/Macro/Landscape/Sunset/Night Scene/Hand-held Twilight/Night Portrait)
Movie (102)	Selects the exposure mode to suit your subject or your effect and records movies. (P/A/S/M)
Drive Mode (45, 143)	Sets a drive mode, such as continuous shooting. (Single Shooting/Cont. Shooting/Self-timer/Bracket: Cont./Single Bracket/WB bracket)
Flash Mode (41, 126)	Sets the flash mode. (Flash Off/Autoflash/Fill-flash/Slow Sync./Rear Sync./Wireless)
Autofocus Mode (109)	Selects the focus method according to the movement of the subject. (Single-shot AF/Automatic AF/Continuous AF)
AF area (110)	Selects the focus area. (Wide/Zone/Spot/Local)
Lock-on AF (111)	Keeps the focus on a subject while tracking it. (Off/On/On(Lock-on AF w/ shutter))
Smile/Face Detect. (117, 120)	Automatically captures people's face(s) with the optimal focus and exposure./Shoots when a smile is detected. (Face Detection Off/Face Detection On (Regist. Faces)/Face Detection On/Smile Shutter)
Auto Object Framing (119)	When shooting faces, close-ups, or subjects tracked by [Lock-on AF], the camera analyzes the scene and automatically trims the image into a suitable composition. (Off/Auto)
ISO (129)	Sets the sensitivity to light. The larger the number, the faster the shutter speed. (Multi Frame Noise Reduct./ISO AUTO, ISO 100 to 16000)
Metering Mode (123)	Selects the method for measuring brightness. (Multi segment/Center weighted/Spot)
Flash Comp. (124)	Adjusts the intensity of the flash output. (–2.0EV to +2.0EV)

White Balance (136)	Adjusts the color tone of images. (Auto WB/Daylight/Shade/Cloudy/Incandescent/Fluor.: Warm White/Fluor.: Cool White/Fluor.: Day White/Fluor.: Daylight/Flash/C.Temp./Filter/Custom)
DRO/Auto HDR (130)	Adjusts the brightness and contrast automatically. (Off/D-Range Opt./Auto HDR)
Creative Style (134)	Selects the desired image processing. (Standard/Vivid/Portrait/Landscape/Sunset/Black & White)
Picture Effect (133)	Shoots with the desired effect filter to achieve more impressive images. (Off/Toy Camera/Pop Color/Posterization/Retro Photo/Soft High-key/Partial Color/High Contrast Mono./Soft Focus/HDR Painting/Rich-tone Mono./Miniature)

Functions selected using the MENU button

You can set the basic settings for the camera as a whole or execute functions such as shooting, playback, or other operations.
Press the MENU button, then set up the desired item using ▲/▼/◀/► on the control button, then press the center of the control button.

Select a menu page Select a menu item



Still shooting menu

1 2 3

Image Size (47)	Selects the size of still images. (L: 20M/M: 10M/S: 5.0M (When [Aspect Ratio] is set to [3:2]) L: 17M/M: 8.4M/S: 4.2M (When [Aspect Ratio] is set to [16:9]))
Aspect Ratio (157)	Selects the aspect ratio for still images. (3:2/16:9)
Quality (157)	Sets the image quality for still images. (RAW/RAW & JPEG/Fine/Standard)
Panorama: Size (47)	Selects the size of panoramic images. (Standard/Wide)
Panorama: Direction (89)	Sets the shooting direction for panoramic images. (Right/Left/Up/Down)

1 2 3

Clear Image Zoom (140)	Zooms an image with higher quality than Digital Zoom. (On/Off)
Digital Zoom (101, 140)	Zooms an image with higher magnification than Clear Image Zoom. This feature is also available for movie recording. (On/Off)

Long Exposure NR (159)	Sets noise reduction processing for shots with a shutter speed of 1 second or longer. (On/Off)
High ISO NR (159)	Sets noise reduction processing for high-sensitivity shooting. (High/Normal/Low)
Flash control (124)	Sets the method for determining the intensity of flash output. (ADI flash/Pre-flash TTL)
AF Illuminator (111)	Sets the AF illuminator, which provides light for a dark scene to aid focusing. (Auto/Off)

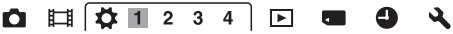
SteadyShot (83)	Sets SteadyShot. (On/Off)
Color Space (160)	Changes the range of reproducible colors. (sRGB/AdobeRGB)
AEL w/ shutter (123)	Sets whether to fix the exposure by pressing the shutter button halfway down. This is convenient when you want to adjust the focus and exposure separately. (On/Off)
Shooting Tip List (62)	Allows you to access all shooting tips.

Movie shooting menu

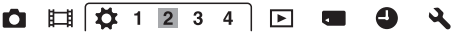
File Format (103)	Selects the movie file format. (AVCHD/MP4)
Record Setting (104)	Selects the size of the recorded movie frame. (60i 24M(FX)/50i 24M(FX)/60i 17M(FH)/50i 17M(FH)/24p 24M(FX)/25p 24M(FX)/24p 17M(FH)/25p 17M(FH)/ 1440×1080 12M/VGA 3M)
SteadyShot (83)	Sets SteadyShot. (On/Off)
AF Track. Duration (102)	Sets the tracking sensitivity of the autofocus feature for movie recording. (High/Mid/Low)

Audio Recording (105)	Sets whether to record audio when shooting a movie. (On/Off)
Wind Noise Reduct. (105)	Reduces wind noise during movie recording. (On/Off)

Custom menu

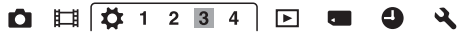


Eye-Start AF	Sets whether to use auto focus when you look through the viewfinder. (On/Off)
FINDER/LCD Setting (164)	Sets the method for switching between the viewfinder and LCD screen. (Auto/Manual)
Red Eye Reduction	Reduces the red-eye phenomenon during flash use. (On/Off)
Release w/o Lens (160)	Sets whether the shutter can open when a lens is not attached. (Enable/Disable)
S. Auto Cont. Shooting (85)	Sets whether to shoot continuously in [Superior Auto] mode. (Auto/Off)
S. Auto Image Extract. (85)	Sets whether to save all the images that were shot continuously in [Superior Auto] mode. (Auto/Off)



Grid Line (161)	Sets a grid line display to enable alignment to a structural outline. (Rule of 3rds Grid/Square Grid/Diag. + Square Grid/Off)
Auto Review (161)	Displays the captured image after shooting. Sets auto review. (10 Sec/5 Sec/2 Sec/Off)
DISP Button(Monitor) (78)	Sets the LCD screen display modes that can be selected by pressing DISP on the control button. (Graphic Display/Display All Info./No Disp. Info./ Histogram/For viewfinder)
DISP Button(Finder) (78)	Sets the viewfinder screen display modes that can be selected by pressing DISP on the control button. (Graphic Display/Display All Info./No Disp. Info./ Histogram)

Peaking Level (115)	Enhances the outline of in-focus ranges with a specific color in manual focus mode. (High/Mid/Low/Off)
Peaking Color (115)	Sets the color used for the peaking function. (Red/Yellow/White)
Live View Display (80)	Sets whether to display the effect of a function on the screen, such as the effect of the exposure compensation value. (Setting Effect ON/Setting Effect OFF)



Func. of AEL button (161)	Assigns the desired function to the AEL button. (Exposure Comp./Drive Mode/Flash Mode/Autofocus Mode/AF area/Smile/Face Detect./Auto Object Framing/ISO/Metering Mode/Flash Comp./White Balance/DRO/Auto HDR/Creative Style/Picture Effect/Image Size/Quality/AEL hold/AEL toggle/[•] AEL hold/[•] AEL toggle/Lock-on AF/AF lock/Aperture Preview/Shot. Result Preview/Zoom/Focus Magnifier)
ISO Button (162)	Assigns the desired function to the ISO button. (Exposure Comp./Drive Mode/Flash Mode/Autofocus Mode/AF area/Smile/Face Detect./Auto Object Framing/ISO/Metering Mode/Flash Comp./White Balance/DRO/Auto HDR/Creative Style/Picture Effect/Image Size/Quality/AEL hold/AEL toggle/[•] AEL hold/[•] AEL toggle/Lock-on AF/AF lock/Aperture Preview/Shot. Result Preview/Zoom/Focus Magnifier)
Preview Button (162)	Selects the function to be assigned to the preview button. (Shot. Result Preview/Aperture Preview/Focus Magnifier)
Focus Hold Button	Sets the function of the focus hold button of the lens. (Focus Hold/D.O.F.Preview)
MOVIE Button	Sets whether to always activate the MOVIE button. (Always/Movie Mode Only)

Lens Comp.: Shading (165)	Compensates for shaded corners on the screen caused by the attached lens. (Auto/Off)
Lens Comp.: Chro. Aber. (165)	Reduces the color deviation at the corners of the screen caused by the attached lens. (Auto/Off)

Lens Comp.: Distortion (165)	Compensates for distortion on the screen caused by the attached lens. (Auto/Off)
e-Front Curtain Shutter (163)	Sets whether or not to use the electronic front curtain shutter function. (On/Off)
Face Registration (118)	Registers or changes the person to be given priority when focusing. (New Registration/Order Exchanging/Delete/Delete All)

Playback menu

Still/Movie Select (149)	Allows you to determine how to group the playback images. (Folder View(Still)/Folder View(MP4)/AVCHD View)
Delete (34, 153)*	Deletes images. (Multiple Img./All in Folder/All AVCHD view files)
Slide Show (150)	Plays a slide show. (Repeat/Interval/Image Type)
Image Index (49)	Displays the image list. (4 Images/9 Images)
Protect (152)*	Protects images, or cancels the protection. (Multiple Img./Cancel All Images/Cancel All Movies(MP4)/Cancel All AVCHD view files)
Specify Printing (184)	Specifies or unspecifies the images for DPOF. (DPOF Setup/Date Imprint)

* Available items differ depending on the view mode.

Volume Settings	Sets the volume for movie playback.
Playback Display (150)	Sets how to play back an image recorded in portrait. (Auto Rotate/Manual Rotate)

Memory Card Tool menu

Format (166)	Formats the memory card.
File Number (166)	Sets the method used to assign file numbers to still images and MP4 movies. (Series/Reset)
Folder Name (166)	Sets the folder format for still images. (Standard Form/Date Form)
Select REC Folder (167)	Changes the selected folder for storing still images and MP4 movies.
New Folder (167)	Creates a new folder for storing still images and MP4 movies.
Recover Image DB (168)	Recovers the image database file and enables recording and playback.
Display Card Space	Displays the remaining recording time of movies and the recordable number of still images on the memory card.

Clock setup menu

Date/Time Setup (27)	Sets date and time and daylight savings.
Area Setting (28)	Selects the area where you are using the camera.

Setup menu

Menu start	Selects a first-displayed menu from the top menu or the last menu screen. (Top/Previous)
Mode Dial Guide	Turns on or off the mode dial guide (the explanation of each shooting mode). (On/Off)
LCD Brightness	Sets the brightness of the LCD screen.
Viewfinder Bright. (163)	Sets the brightness of the viewfinder. (Auto/Manual)
Viewfinder Color Temp.	Sets the color temperature of the screen in the viewfinder. Setting it toward + makes the color cooler, and toward – makes the color warmer. (+2 to 0 to –2)

Power Save (164)	Sets the level of the power saving feature. (Max/Standard)
Power Saving Start Time (164)	Sets the interval after which power save mode engages. (30 Min/5 Min/1 Min/20 Sec/10 Sec)

HDMI Resolution (155)	Sets the resolution when the camera is connected to an HDMI TV. (Auto/1080p/1080i)
CTRL FOR HDMI (156)	Operates the camera from a TV that supports "BRAVIA" Sync. (On/Off)
Upload Settings* (168)	Sets whether to use the upload function of the camera with an Eye-Fi card. (On/Off)
USB Connection (177)	Selects the appropriate USB connection method for each computer or USB device connected to the camera. (Auto/Mass Storage/MTP/PC Remote)
USB LUN Setting (177)	Enhances compatibility by limiting the functions of USB connection. Normally, use [Multi], and if you cannot make a connection, set it to [Single]. (Multi/Single)
Audio signals	Sets whether to use the beep sound when the focus is achieved or the self-timer is working. (On/Off)

* Appears when an Eye-Fi card (sold separately) is inserted in the camera.

Version (174)	Displays the camera software version.
Language	Selects the language.
Cleaning Mode (186)	Starts cleaning mode to clean the image sensor.
Demo Mode	Sets the demonstration playback of a movie to on or off. (On/Off)
Initialize (170)	Restores the settings to their defaults. (Reset Default/Rec mode reset/Custom reset)

Using the guide function of the camera

In-Camera Guide

When you press the ? (In-Camera Guide) button on the Fn (Function) screen or menu screen, a guide for the currently selected function or setting automatically appears.
To select unavailable functions or settings on the Fn screen, press the center of the control button to display the appropriate setup to enable them.

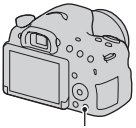
? (In-Camera Guide) button

Shooting Tips

The camera displays shooting tips in accordance with the shooting mode selected.

1 Press the ? (In-Camera Guide) button when the recording information display is displayed.

A shooting tip list for the current subject automatically appears.



? (In-Camera Guide) button

2 Select the desired shooting tip using ▲/▼ on the control button, then press the center of the control button.

The shooting tip is displayed.

- You can scroll the screen using ▲/▼.
- You can select the item using ◄/►.

To access all shooting tips

You can search through all the shooting tips from the menu.
Use this item when you want to read shooting tips you have seen before.

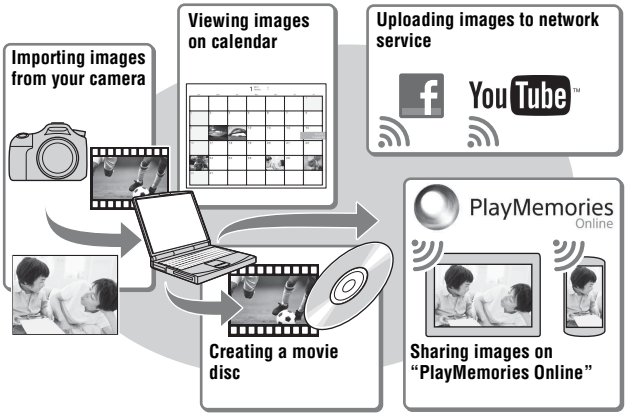
MENU button → 3 → [Shooting Tip List]→ Select the desired shooting tip

What you can do with software

To utilize images recorded with the camera, use the following software:

- "PlayMemories Home" (Windows only)
  You can import still images or movies recorded with the camera to your computer so that you can view them, and use various convenient features to enhance the images you have shot. "PlayMemories Home" is required when importing AVCHD movies to your computer.
- "Image Data Converter"
  You can retouch RAW format images and convert them into JPEG/TIFF format.

What you can do with "PlayMemories Home"



Installing "PlayMemories Home" (for Windows only)

You can install "PlayMemories Home" from the following URL (page 66):
www.sony.net/pm

Notes

- An Internet connection is required to install “PlayMemories Home.”
- An Internet connection is required to use “PlayMemories Online” or other network services. “PlayMemories Online” or other network services may not be available in some countries or regions.
- “PlayMemories Home” is not compatible with Macs. Use the applications that are installed on your Mac. For details, visit the following URL: http://www.sony.co.jp/imsoft/Mac/

What you can do with “Image Data Converter”

With “Image Data Converter,” you can do the following:

- You can play back and edit images recorded in RAW format with various corrections, such as tone curve and sharpness.
- You can adjust images with white balance, exposure, and [Creative Style], etc.
- You can save the images displayed and edited on a computer. You can either save the image as RAW format or save it in the general file format (JPEG/TIFF).
- You can display and compare the RAW images and JPEG images recorded by this camera.
- You can rank images in 5 grades.
- You can apply color labels, etc.

Installing “Image Data Converter” (Windows/Mac)

You can download “Image Data Converter” from the following URL (page 67):
http://www.sony.co.jp/ids-se/

Notes

- An Internet connection is required to install “Image Data Converter.”

Installing the software

Installing "PlayMemories Home"

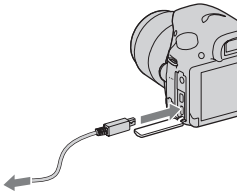
- Log on as Administrator.
- If the software "PMB (Picture Motion Browser)," supplied with models released before 2011, has already been installed on your computer, "PlayMemories Home" will overwrite it and will be installed. Although some "PlayMemories Home" functions differ from those of "PMB," use "PlayMemories Home."

1 Using the Internet browser on your computer, go to the following URL, then click [Install] → [Run].

www.sony.net/pm

2 Follow the instructions on the screen to complete the installation.

- When the message to connect the camera to a computer is displayed, connect the camera and computer using the micro USB cable (supplied).



Viewing "PlayMemories Home Help Guide"

For details on how to use "PlayMemories Home," refer to the "PlayMemories Home Help Guide."

Double-click the [PlayMemories Home Help Guide] icon on the desktop.

- To access the "PlayMemories Home Help Guide" from the start menu: Click [Start] → [All Programs] → [PlayMemories Home] → [PlayMemories Home Help Guide].

- For Windows 8, select the [PlayMemories Home] icon on the Start screen, then launch "PlayMemories Home" and select [PlayMemories Home Help Guide] from the [Help] menu.
- For details on "PlayMemories Home," you can also see the following PlayMemories Home support page (English only):
  http://www.sony.co.jp/pmh-se/

Installing "Image Data Converter"

1 Using the Internet browser on your computer, go to the following URL.

For Windows: http://www.sony.co.jp/imsoft/Win/
For Mac: http://www.sony.co.jp/imsoft/Mac/

2 Follow the instructions on the screen to complete the installation.

Viewing "Image Data Converter Guide"

For details on how to use "Image Data Converter," refer to the "Image Data Converter Guide."

For Windows:
Click [Start] → [All Programs] → [Image Data Converter] → [Help] → [Image Data Converter Ver.4].

For Mac:
Start Finder → [Applications] → [Image Data Converter] → [Image Data Converter Ver.4] → In the menu bar, choose "Help" → "Image Data Converter Guide."

- For Windows 8, start "Image Data Converter Ver.4" → In the menu bar, choose "Help" → "Image Data Converter Guide."
- For details on "Image Data Converter," you can also see the following "Image Data Converter" support page (English only):
  http://www.sony.co.jp/ids-se/

Installing “Remote Camera Control”

To use “Remote Camera Control,” connect the camera to a computer. The following functions are available.

- You can set up the camera or shoot an image from the computer.
- You can record an image directly to the computer.
- You can perform Interval Timer Shooting.

1 Using the Internet browser on your computer, go to the following URL.

For Windows: http://www.sony.co.jp/imsoft/Win/
For Mac: http://www.sony.co.jp/imsoft/Mac/

2 Follow the instructions on the screen to complete the installation.

- For details on how to use “Remote Camera Control,” refer to the “Help.”

Selecting the method for creating a movie disc

Depending on the disc type, playable devices may vary. Select the method that suits your disc player.
There are two ways to create a movie disc. Use “PlayMemories Home” on your computer or create a disc using devices other than a computer, such as a recorder.

Disc type/usage	Record setting available		Player
	FX	FH	
To keep high-definition image quality (HD)	✓	✓	Blu-ray disc playback devices (Sony Blu-ray disc player, PlayStation®3, etc.)
To keep high-definition image quality (HD) (AVCHD recording disc)	–*	✓	AVCHD format playback devices (Sony Blu-ray disc player, PlayStation®3, etc.)
To keep standard definition image quality (STD)	–*	–*	Ordinary DVD playback devices (DVD player, computer that can play DVDs, etc.)

* Movies recorded with the [60i 24M(FX)]/[50i 24M(FX)] or [24p 24M(FX)]/[25p 24M(FX)] setting in [Record Setting] are converted by “PlayMemories Home” in order to create an AVCHD recording disc. This conversion can take a long time. Also, you cannot create a disc with the original image quality. If you want to keep the original image quality, store your movies on a Blu-ray disc (page 182).

Creating a disc using a computer

You can import AVCHD movies to a computer using “PlayMemories Home,” and create an AVCHD recording disc or a standard definition quality (STD) disc.
For details on how to create a disc using “PlayMemories Home,” see “PlayMemories Home Help Guide.”

Notes

- To create Blu-ray discs using “PlayMemories Home,” install our proprietary add-on software. For details, access the following URL: http://support.d-imaging.sony.co.jp/BDUW/
- PlayStation®3 may not be available in some countries/regions.
- Movies recorded with the [60i 24M(FX)]/[50i 24M(FX)] or [24p 24M(FX)]/[25p 24M(FX)] setting in [Record Setting] are converted by “PlayMemories Home” in order to create an AVCHD recording disc. This conversion can take a long time. Also, you cannot create a disc with the original image quality. If you want to keep the original image quality, store your movies on a Blu-ray disc (page 182).

Creating a disc with a device other than a computer

You can create a disc using a Blu-ray disc recorder, etc.
The disc type you can create depends on the device used.

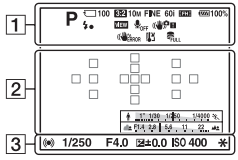
Device		Disc type	
	Blu-ray disc recorder: To create a Blu-ray disc or DVD with standard image quality (STD)	High-definition image quality (HD)	Standard definition image quality (STD)
	HDD recorder, etc.: To create a DVD with standard image quality (STD)	Standard definition image quality (STD)	

Notes

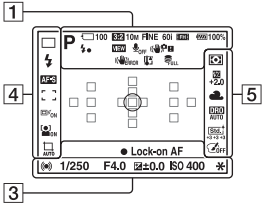
- For details on how to create a disc, refer to the operating instructions of the device you use.

List of screen icons

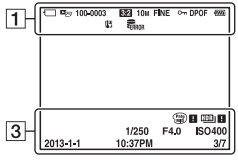
Graphic Display (LCD screen)



Display All Info. (LCD screen)



For playback (Basic information display)



1

Display	Indication
iA iA+ T8 P A S M 🌙 🌄 Auto P A S M	Exposure mode (36)
🌙 🌄 🏔 🌷 🌸	Scene Recognition icons (37, 85)
OFF	Memory card (21, 205)/ Upload (168)
100	Remaining number of recordable images
3:2 16:9	Aspect ratio of still images (157)
20M 10M 5.0M 17M 8.4M 4.2M WIDE STD	Image size of still images (47)
RAW RAW+J FINE STD	Image quality of still images (157)
60i 24p 50i 25p	Frame rate of movies (104)
FX FH 1080i VGA	Image size of movies (104)
100%	Remaining battery (23)

Display	Indication
	Flash charge in progress (41)
VIEW	Setting Effect OFF (80)
	No audio recording of movies (105)
	SteadyShot/Camera shake warning (83)
	SteadyShot error (197)
	Overheating warning (10)
	Database file full (199)/ Database file error (199)
MP4 AVCHD	View Mode (149)
100-0003	Folder - file number (179)
	Protect (152)
DPOF	DPOF set (184)
	Remaining battery warning (23)

2

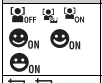
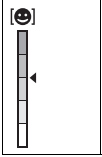
Display	Indication
	Spot metering area (123)
	AF area (110)
	Smart Zoom (140)
	Clear Image Zoom (140)
	Digital Zoom (140)
W T	Zoom magnification
	Shutter speed indicator (46)
	Aperture indicator (46)

3

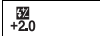
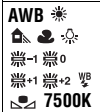
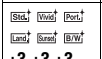
Display	Indication
REC 0:12	Recording time of the movie (m:s)
	Focus (31, 107)
1/250	Shutter speed (94)
F4.0	Aperture (92)
	EV scale (43, 97, 146) (Only for viewfinder)
+3.0	Exposure compensation (43)
	AE lock (122)
	Auto HDR image warning (131)
	Picture Effect error (134)
ISO400	ISO sensitivity (129)
3/7	File number/Number of images in the view mode
2013-1-1 10:37AM	Date of recording

4

Display	Indication
Hi 10	Drive mode (45, 143)
AUTO SLOW REAR WL HSS	Flash mode (41, 126)/ Red-eye reduction (57)
AF-A AF-S AF-C MF	Focus mode (109)
	AF area (110)
ON OFF	Lock-on AF (111)

Display	Indication
	Face Detection (117)/ Smile Shutter (120)
	Auto Object Framing (119)
	Smile Detection Sensitivity indicator (120)

5

Display	Indication
	Metering mode (123)
	Flash compensation (124)
	White balance (Auto, Preset, Custom, Color temperature, Color filter) (136)
	D-Range Optimizer (130)/Auto HDR (131)
	Creative Style (134)/ Contrast, Saturation, Sharpness
	Picture Effect (133)

Functions available for each shooting mode

The functions you can use depend on the selected shooting mode.
In the table below, ✓ indicates the function is available, and a – indicates the function is not available.
The functions you cannot use are displayed in gray on the screen.

Shoot Mode		Exposure Comp. (43)	Self-timer (144)	Cont. Shooting (143)	Face Detection (117)	Smile Shutter (120)	Auto Object Framing (119)
iAUTO (30, 85)		–	✓	✓	✓	✓	✓
Flash Off (30, 85)		–	✓	✓	✓	✓	✓
iAUTO+ (37, 85)		–	✓	✓	✓	✓	✓
SCN (38, 86)	Hand-held Twilight	–	✓	–	✓	✓	✓
	Anti Motion Blur	–	✓	✓	✓	✓	–
	Gourmet	–	✓	–	✓	✓	✓
	Landscape	–	✓	–	✓	✓	✓
	Beach	–	✓	–	✓	✓	✓
	Twilight	–	✓	–	✓	✓	✓
	Soft Snap	–	–	–	✓	–	–
	Soft Portrait	–	✓	–	✓	✓	✓
Sweep Panorama (39, 88)		✓	–	–	–	–	–
Tele Macro (40, 90)		✓	–	–	–	–	–
P (91)		✓	✓	✓	✓	✓	✓
A (92)		✓	✓	✓	✓	✓	✓
S (94)		✓	✓	✓	✓	✓	✓
M (96)		✓*	✓	✓	✓	✓	✓
Movie (32, 100)		✓*	✓	✓	✓	–	–

* When the exposure mode is set to M, the exposure can be adjusted only when [ISO] is set to [AUTO].

Flash modes available

The flash modes you can select depend on the shooting mode and functions selected.
In the table below, ✓ indicates the function is selectable, and a – indicates the function is not selectable.
The flash modes you cannot select are displayed in gray on the screen.

Shoot Mode		(Flash Off)	AUTO (Autoflash)	(Fill-flash)	SLOW (Slow Sync.)	REAR (Rear Sync.)	WL (Wireless)
iAUTO (30, 85)		✓	✓	✓	–	–	–
(30, 85)		✓	–	–	–	–	–
iAUTO+ (37, 85)		✓	✓	✓	–	–	–
SCN (38, 86)		✓	✓	✓	–	–	–
		✓	–	✓	–	–	–
		✓	✓	✓	–	–	–
		✓	–	✓	–	–	–
		✓	–	✓	–	–	–
		✓	–	–	–	–	–
		✓	–	–	–	–	–
		–	✓	–	✓	–	–
(39, 88)		✓	–	–	–	–	–
(40, 90)		–	–	✓	✓	✓	✓
P (91)		–	–	✓	✓	✓	✓
A (92)		–	–	✓	✓	✓	✓
S (94)		–	–	✓	✓	✓	✓
M (96)		–	–	✓	✓	✓	✓
(32, 100)		✓	–	–	–	–	–

Advanced Operations

This section provides further information on operating the camera.

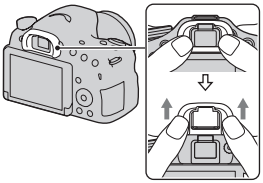
Setting up the camera

Removing the Eyepiece cup

When attaching the FDA-A1AM Angle Finder (sold separately) to the camera, remove the Eyepiece cup.

Carefully slide the Eyepiece cup off by pushing on each side.

- Put your fingers under the Eyepiece cup, and slide it upward.



Notes

- When you attach an FDA-A1AM Angle Finder (sold separately) to the camera, set [FINDER/LCD Setting] to [Manual] in the ☼ Custom menu and switch the display between the viewfinder and the LCD screen by pressing the FINDER/LCD button. Setting [Eye-Start AF] to [Off] is recommended because the eyepiece sensors located above the viewfinder may be activated.

Shooting mode screen display

Selecting the screen mode

You can select the desired screen mode. When you switch the screen by pressing DISP on the control button (page 46), only selected screens are displayed. You can set the screens to be displayed on the LCD screen and the viewfinder separately.

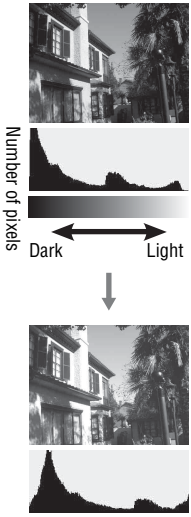
1 MENU button → ☼ 2 → [DISP Button(Monitor)] or [DISP Button(Finder)]

2 Select the desired display using ▲/▼/◄/► on the control button, then press the center of the control button.

3 Press the MENU button.

Histogram

The histogram displays the luminance distribution that shows how many pixels of a particular brightness exist in the picture.
The exposure compensation will change the histogram accordingly.
Both ends of the histogram show a high-key or low-key portion. You cannot restore these areas with a computer later. Adjust the exposure if necessary and shoot again.



Notes

- The histogram does not indicate the final recorded image. It indicates the condition of the image just monitored on the screen. The histogram will differ based on aperture setting, etc.
- The histogram differs between shooting and playback in the following situations:
  – When firing the flash.
  – When the subject has low light intensity, such as night scenery.

Monitoring the subject through the lens without effects displayed

You can monitor the subject through the lens without displaying effects, such as [Exposure Comp.], [White Balance], [Creative Style], [Picture Effect], etc.

MENU button → ☼ 2 → [Live View Display] → [Setting Effect OFF]

- When [Setting Effect OFF] is selected, the Live View image in M mode is always displayed with the appropriate brightness.

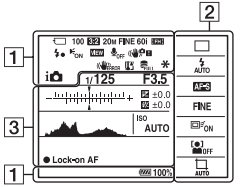
Notes

- [Setting Effect OFF] cannot be selected when the exposure mode is set to [Intelligent Auto], [Superior Auto], [Sweep Panorama], [Movie], or [Scene Selection].

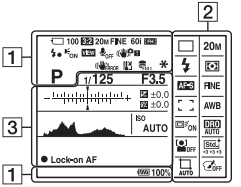
List of viewfinder mode icons

When [For viewfinder] in [DISP Button(Monitor)] is activated, the LCD screen can be set to the mode suitable for shooting with the viewfinder by pressing DISP on the control button.
See pages in parentheses for operation details.

In [Intelligent Auto], [Superior Auto], or [Scene Selection] mode



In [Tele-zoom Cont. Priority AE], [Picture Effect], P/A/S/M, or [Sweep Panorama] mode



1

Display	Indication
iA iA+ T P A S M	Exposure mode (36)
OFF	Memory card (21, 205)/ Upload (168)
100	Remaining number of recordable images
3:2 16:9	Aspect ratio of still images (157)
20M 10M 5.0M 17M 8.4M 4.2M WIDE STD	Image size of still images (47)
RAW RAW+J FINE STD	Image quality of still images (157)
60i 24p 50i 25p	Frame rate of movies (104)
FX FH 1080i VGA	Image size of movies (104)
100%	Remaining battery (23)
	Flash charge in progress (41)
VIEW	Setting Effect OFF (80)
OFF	No audio recording of movies (105)
	SteadyShot/Camera shake warning (83)
ERROR	SteadyShot error (197)

Display	Indication
	Overheating warning (10)
FULL ERROR	Database file full (199)/ Database file error (199)

2

Display	Indication
Hi 10 BRK C 0.3EV BRK S 0.3EV DRO WB Lo	Drive mode (45, 143)
AUTO SLOW REAR WL HSS	Flash mode (41, 126)/ Red-eye reduction (57)
AF-A AF-S AF-C MF	Focus mode (109)
	AF area (110)
ON OFF	Lock-on AF (111)
OFF ON ON ON ON	Face Detection (117)/ Smile Shutter (120)
	Metering mode (123)
AWB 7500K A5 G5	White balance (Auto, Preset, Custom, Color temperature, Color filter) (136)
D-R OFF DRO AUTO HDR AUTO	D-Range Optimizer (130)/Auto HDR (131)
Std. Vivid Port. Land. Sunset B/W +3 +3 +3	Creative Style (134)/ Contrast, Saturation, Sharpness

Display	Indication
	Picture Effect (133)
	Auto Object Framing (119)

3

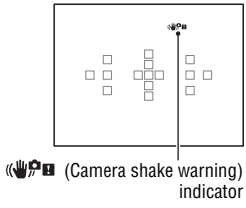
Display	Indication
1/125	Shutter speed (94)
F3.5	Aperture (92)
	Exposure compensation (43)/Metered Manual (97)
	Flash compensation (124)
	EV scale (146)
ISO AUTO	ISO sensitivity (129)
✱	AE lock (122)
	Histogram (79)
● **Lock-on AF**	Lock-on AF (111)

Shooting a clear image without camera shake

"Camera shake" refers to unwanted movement of the camera that occurs during shooting, resulting in a blurred image.
To reduce camera shake, follow the instructions below.

Camera shake warning indicator

When the camera detects potential camera shake, the (Camera shake warning) indicator flashes. In this case, use a tripod or the flash.



Notes

- The (Camera shake warning) indicator is displayed only in modes that automatically set the shutter speed. This indicator is not displayed in M/S modes or when you record movies.

Using the SteadyShot function

The SteadyShot function is available with this camera to reduce camera shake. The SteadyShot function can be set separately for still image shooting and for movie recording.
The SteadyShot function is set to [On] in the default settings.

MENU button → 3 or 1 → [SteadyShot] → Select the desired setting

Notes

- The SteadyShot function may not work optimally when the power has just been turned on, right after you point the camera towards a subject, or when the shutter button has been pressed all the way down without stopping halfway.

Using a tripod

In the following cases, we recommend that you mount the camera on a tripod.

- Shooting without a flash under dark conditions.
- Shooting with slow shutter speeds, which are typically used in night-time shooting.
- Shooting close-ups of the subjects, such as in macro shooting.
- Shooting with a telescopic lens.

Notes

- When using a tripod, deactivate the SteadyShot function, as it may cause a malfunction.

Selecting the shooting mode

iAuto Intelligent Auto/ Flash Off

Set the mode dial to iAuto (Intelligent Auto), and shoot images (page 30).

- Select (Flash Off) when shooting in a location where the use of flash is restricted.

Notes

- Since the camera turns on the automatic setting function, many features will be unavailable, such as exposure compensation and ISO setting. If you want to adjust various settings, set the mode dial to P, then shoot your subject.

iAuto+ Superior Auto

Set the mode dial to iAuto+ (Superior Auto), and shoot images (page 37).

To set continuous shooting

MENU button → ☼ 1 → [S. Auto Cont. Shooting] → Select the desired setting

To select the storage method to be used for recorded images

In continuous shooting, you can select a storage method that allows the camera either to store 1 appropriate image from among the continuously shot images or to store all the images.

MENU button → ☼ 1 → [S. Auto Image Extract.] → Select the desired setting

Notes

- Even if you set [S. Auto Image Extract.] to [Off], when [Hand-held Twilight] is selected as a recognized scene mode, 1 combined image is saved.
- When [Quality] is set to [RAW] or [RAW & JPEG], performance will be affected.

SCN Scene Selection

This mode is suitable for

● Shooting with preset settings based on the scene

Set the mode dial to SCN (Scene Selection), select the desired mode, and shoot images (page 38).

(Portrait)	Blurs away backgrounds and sharpens the subject. Accentuates skin tones softly. • To blur the background more, set the lens to the telephoto position. • You can shoot a vivid image by focusing on the eye that is closer to the lens. • Use the lens hood to shoot backlit subjects. • Use the red-eye reduction function if the eyes of your subject turn red from the flash (page 57).
(Sports Action)	Shoots a moving subject at a fast shutter speed so that the subject looks as if it is standing still. The camera shoots images continuously while the shutter button is pressed. • Press and hold the shutter button halfway down and wait for the right moment.
(Macro)	Shoots close-ups of the subjects such as flowers, foods. • You can shoot a closer subject using a macro lens (sold separately). • Set the flash mode to [Flash Off] when you shoot a subject within 1 m (3.3 feet). • When shooting in macro mode, the SteadyShot function will not be fully effective. Use a tripod to achieve better results. • The shortest focal distance does not change.
(Landscape)	Shoots the entire range of scenery in sharp focus with vivid colors. • To accentuate the openness of the scenery, set the lens to wide angle.

(Sunset)	Shoots the red of the sunrise or sunset beautifully.
(Night Scene)	Shoots night scenes at a distance without losing the dark atmosphere of the surroundings. • The shutter speed is slower, so we recommend using a tripod. • The picture may not be taken properly when shooting a night scene in total darkness.
(Hand-held Twilight)	Shoots night scenes with less noise and blur without using a tripod. A burst of shots are taken, and image processing is applied to reduce subject blur, camera shake, and noise. • Blur reduction is less effective when shooting: – Subjects with erratic movement – Subjects too close to the camera – Subjects with little contrast such as the sky, a sandy beach, or a lawn – Subjects that change constantly, such as waves or waterfalls • Block noise may occur when using a light source that flickers, such as fluorescent lighting.
(Night Portrait)	Shoots portraits in night scenes. • The shutter speed is slower, so we recommend using a tripod.

Shooting technique

- When you want finer images, set the mode dial to P, A, S, or M and use the [Creative Style] function (page 134) so that you can adjust the exposure, ISO, etc.

Notes

- Since the camera judges the settings automatically, many features will be unavailable, such as exposure compensation and ISO setting.
- The flash is set to [Autoflash] or [Flash Off] for each [Scene Selection] mode. You can change these settings (pages 41, 75, 126).

Sweep Panorama

This mode is suitable for

● Shooting expansive scenery or high-rise buildings with dynamic composition.

Set the mode dial to (Sweep Panorama), and shoot images (page 39).

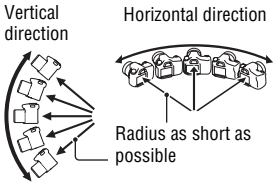
Notes

- If you cannot pan or tilt the camera across the entire subject within the given time, a gray area occurs in the composed image. If this happens, move the camera faster to record a full panoramic image.
- Since several images are stitched together, the stitched part will not be recorded smoothly. While shooting, do not tilt the camera back and forth or right and left as you swing the camera straight ahead of you.
- Under low light conditions, panoramic images may be blurred or not recorded.
- Under flickering lights such as fluorescent lights, the brightness or color of the combined image is not always the same.
- When the panoramic shot overall and the angle in which you fixed the focus and exposure with AE/AF lock are extremely different in brightness, color and focus, the shot will not be successful. If this happens, change the lock angle and shoot again.
- [Sweep Panorama] is not suitable when shooting:
  - Moving subjects.
  - Subjects too close to the camera.
  - Subjects with little contrast such as the sky, a sandy beach, or a lawn.
  - Subjects that change constantly, such as waves or waterfalls.
  - Subjects for which the sun or electric lights, etc., are much brighter than the surroundings.
- [Sweep Panorama] recording may stop in the following situations:
  - You pan or tilt the camera too fast or too slow.
  - There is too much camera shake.

- The camera continues shooting during [Sweep Panorama] recording, and the shutter keeps clicking until the end of the shot.
- [Auto Object Framing] and the zoom feature of the camera cannot be used.

Tips for shooting a panoramic image

Pan or tilt the camera in an arc with a constant velocity and in the same direction as the indication on the screen. [Sweep Panorama] is better suited for still subjects than moving ones.



- In [Sweep Panorama], we recommend that you use a wide-angle lens.
- When you use a lens that has a long focal length, pan or tilt the camera more slowly than when you use a wide-angle lens.
- Determine the scene and press the shutter button halfway, so that you can lock the focus and exposure. Then, press the shutter button fully down and pan the camera.
- If greatly varied shapes or scenery are concentrated along a screen edge, the image composition may fail. In such cases, adjust the frame composition so that the section is in the center of the image, then shoot again.

To change the image size

You can select the image size: MENU button → 1 → [Panorama: Size].

To set the pan or tilt direction

You can set the direction in which to pan or tilt the camera.

MENU button → 1 → [Panorama: Direction] → Select the desired setting

Tele-zoom Cont. Priority AE

This mode is suitable for

- Shooting a fast-moving subject continuously to capture a moment.
- Shooting children's facial expressions that change from moment to moment.

Set the mode dial to (Tele-zoom Cont. Priority AE), and shoot images (page 40).

- The minimum zoom scale of the camera is set to 2 times and the image size is set to S.

Shooting techniques

- When [Autofocus Mode] is set to [Continuous AF], the camera continues to adjust focus during shooting. You can set [ISO] to the desired number.
- In manual focus mode or when the autofocus mode is set to [Single-shot AF], you can adjust the ISO sensitivity and the aperture. When [Single-shot AF] is selected, the focus is fixed at the first image.

Notes

- Depending on the ISO or aperture setting, the shutter speed is slower and the continuous shooting speed may become slower.
- The Face Detection function is turned off.
- When [Auto HDR] is selected, the DRO process is performed temporarily according to the DRO setting.
- When (Tele-zoom Cont. Priority AE) is selected, you cannot set [Quality] to [RAW] or [RAW & JPEG].
- Our measurement conditions. The speed of continuous shooting may be slower, depending on shooting conditions (Image size, ISO setting, High ISO NR, or the setting of [Lens Comp.: Distortion]).

P Program Auto

This mode is suitable for

- Changing settings for ISO sensitivity, Creative Style, D-Range Optimizer, etc. while using automatic exposure.

1 Set the mode dial to P.

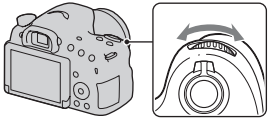
2 Set the shooting functions to your desired settings (pages 106 to 146).

- To fire the flash, press the ϟ button.

3 Adjust the focus and shoot the subject.

Program Shift

You can temporarily change the shutter speed and aperture value combination while keeping the correct exposure determined by the camera.
Rotate the control dial to select your desired combination while the focus is achieved.
The exposure mode indication changes to "P*."



A Aperture Priority

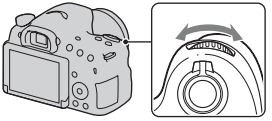
This mode is suitable for

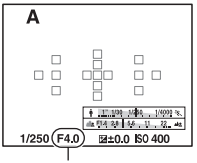
- Placing the subject in sharp focus and blurring everything in front of and beyond the subject. Opening the aperture narrows the range that is in focus. (Depth of field becomes shallower.)
- Shooting depth of scenery. Narrowing the aperture widens the range that is in focus. (Depth of field becomes deeper.)

1 Set the mode dial to A.

2 Select the aperture value (F-number) using the control dial.

- Smaller F-number: The foreground and background of the subject are blurred. Larger F-number: The subject and its foreground and background are all in focus.
- You cannot check the blurring of an image on the LCD screen or in the viewfinder. Check the recorded image and adjust the aperture.



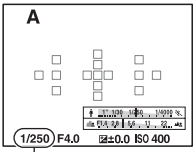


Aperture (F-number)

3 Adjust the focus and shoot the subject.

The shutter speed is automatically adjusted to obtain the correct exposure.

- When the camera judges that the proper exposure cannot be obtained using the selected aperture value, the shutter speed flashes. If this happens, adjust the aperture again.



Shutter speed

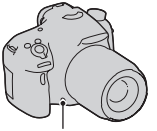
Shooting techniques

- The shutter speed may become slower depending on the aperture value. When the shutter speed is slower, use a tripod.
- To blur the background more, use a telephoto lens or a lens that is equipped with a smaller aperture value (bright lens).
- You can check the approximate blurring of the image before recording using the preview button.

Notes

- Press the ϟ button when you shoot with the flash. However, the flash range differs according to the aperture value. When you shoot with the flash, check the flash range under “Specifications.”

To check blurring of the background (Preview button)



The LCD screen and the viewfinder show an image captured with the widest aperture. The change in aperture affects the sharpness of the subject image, creating a discrepancy between the sharpness of the image before shooting and that of the actual image.
While you are pressing the preview button, you can see the image with the aperture used in the actual shot so that you can check the approximate sharpness of the subject before shooting.

- Press the preview button after you adjust the focus.
- You can adjust the aperture in preview mode.

Notes

- When [Focus Magnifier] is assigned to the preview button, set [Preview Button] to [Shot. Result Preview] or [Aperture Preview] in the ☼ Custom menu (page 162).

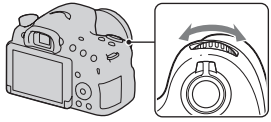
S Shutter Priority

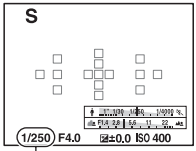
This mode is suitable for

- Shooting a moving subject at a moment in time. Use a faster shutter speed to crisply shoot an instant of movement.
- Tracing movement to express dynamism and flow. Use a slower shutter speed to shoot a trailing image of a moving subject.

1 Set the mode dial to S.

2 Select the shutter speed using the control dial.



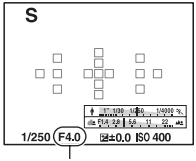


Shutter speed

3 Adjust the focus and shoot the subject.

The aperture is automatically adjusted to obtain the correct exposure.

- When the camera judges that the proper exposure cannot be obtained with the selected shutter speed, the aperture value flashes. If this happens, adjust the shutter speed again.



Aperture (F-number)

Shooting techniques

- When the shutter speed is slower, use a tripod.
- When shooting an indoor sport, select a higher ISO sensitivity.

Notes

- The (Camera shake warning) indicator does not appear in [Shutter Priority] mode.
- The higher the ISO sensitivity, the more conspicuous the noise.
- When the shutter speed is 1 second or longer, noise reduction (Long Exposure NR) will be performed for the same amount of time that the shutter was open after shooting. You cannot shoot during noise reduction.

• Press the ϟ button when you shoot with the flash. However, when using the flash, if you close the aperture (a larger F-number) by making the shutter speed slower, the light of the flash will not reach distant subjects.

M Manual Exposure

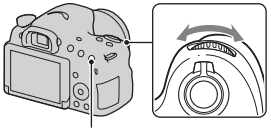
This mode is suitable for

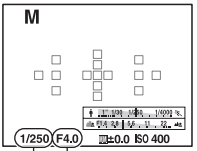
● Shooting with the desired exposure setting by adjusting both the shutter speed and aperture.

1 Set the mode dial to M.

2 Rotate the control dial to adjust the shutter speed, and while pressing the AV button, rotate the control dial to adjust the aperture.

- You can set [ISO] to [AUTO] even in [Manual Exposure] mode. When [ISO] is set to [AUTO], the ISO sensitivity automatically changes for proper exposure according to the set shutter speed and aperture value.
- When [ISO] is set to [AUTO], if proper exposure is not obtained with your settings, the setting value indicators on the screen will flash. In this case, adjust the shutter speed or aperture value again.



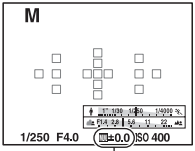


3 Shoot the image after the exposure is set.

- When [ISO] is set to other than [AUTO], check the exposure value using Metered Manual*.
  Toward +: Images become brighter.
  Toward –: Images become darker.

* When the camera is in M mode, it will show an under or over compensation value based on the correct exposure. In LCD screen mode, a numeric value is displayed. In viewfinder mode, the value is indicated on the EV scale.

LCD screen



Metered Manual

The screen in the viewfinder

Metered Manual

Notes

- The (Camera shake warning) indicator is not displayed in manual exposure mode.
- Press the button when you shoot with the flash. However, the flash range differs according to the aperture value. When you shoot with the flash, check the flash range under “Specifications.”

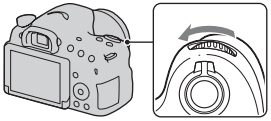
M BULB

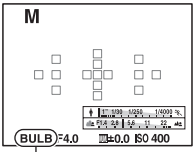
This mode is suitable for

- Shooting trails of light, such as fireworks.
- Shooting trails of stars.

1 Set the mode dial to M.

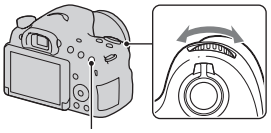
2 Rotate the control dial to the left until [BULB] is displayed.





BULB

3 While pressing the AV button, rotate the control dial to adjust the aperture (F-number).



AV button

4 Press the shutter button halfway down to adjust the focus.

5 Press and hold the shutter button for the duration of the shot.

As long as the shutter button is pressed, the shutter remains open.

Shooting techniques

- Use a tripod.
- Set the focus to infinity in manual focus mode when shooting fireworks, etc. When the infinity position of the lens is not known, first adjust the focus on fireworks that are being set off in the same general area, then shoot them.

- If you use a Remote Commander* that is equipped with a shutter button lock function (sold separately), you can keep the shutter open using the Remote Commander.

  * Use a Remote Commander that is compatible with a Multi/Micro USB Terminal.

Notes

- When using a tripod, turn off the SteadyShot function (page 84).
- The longer the exposure time, the more conspicuous the noise on the image.
- After shooting, noise reduction (Long Exposure NR) will be performed for the same amount of time that the shutter was open. You cannot do any further shooting during the reduction.
- When the Smile Shutter or Auto HDR function is activated, or when [Picture Effect] is set to [HDR Painting] or [Rich-tone Mono.], you cannot set the shutter speed to [BULB].
- If the Smile Shutter, Auto HDR function, or the [HDR Painting] or [Rich-tone Mono.] setting of [Picture Effect] is used with the shutter speed set to [BULB], the shutter speed is temporarily set to 30 seconds.
- We recommend that you start BULB shooting while the temperature of the camera is moderate to prevent the quality of the image from deteriorating.

Movie recording setup

Recording movies easily

Movie recording can be started from any exposure mode.
The shutter speed and aperture value are adjusted automatically.

Press the MOVIE button to start recording (page 32).

Shooting techniques

- Start recording after you adjust the focus.
- The following settings that were set during still image shooting can also be used in movie recording.
  – ISO
  – White Balance
  – Creative Style
  – Exposure Comp.
  – AF area
  – Metering Mode
  – Face Detection
  – Lock-on AF
  – D-Range Opt.
  – Lens Comp.: Shading
  – Lens Comp.: Chro. Aber.
  – Lens Comp.: Distortion
  – Picture Effect
- [ISO], [Exposure Comp.], [Lock-on AF], or [AF area] can be adjusted during movie recording.
- If you assign [AF lock] to the AEL button or ISO button, you can lock the focus by pressing these buttons in autofocus mode.

Notes

- In movie recording mode, the recordable area (angle of view) is narrower than that of still image shooting. To record with the same angle of view as a 16:9 still image, set [SteadyShot] to [Off] (page 83).
- When the [For viewfinder] screen is displayed on the LCD screen, the LCD screen is switched to the [Display All Info.] screen at the moment movie recording starts.

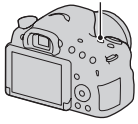
- Do not shoot a strong light source, such as the sun. The internal mechanism of the camera may be damaged.
- When you import AVCHD movies to a computer, use “PlayMemories Home” (pages 64, 178).
- When you continue to shoot for an extended period of time, the temperature of the camera rises and the image quality may deteriorate.
- When the [!] icon appears, the temperature of the camera is too high. Turn the camera off and wait until the temperature of the camera drops. If you continue to shoot, the camera turns off automatically.
- Since the shutter speed and aperture are automatically adjusted, the shutter speed will be higher and the movement of the subject may not be smooth under bright conditions. Selecting manual focus and adjusting the shutter speed or aperture may make the movement smoother (page 102).
- A value for ISO sensitivity between ISO 100 and ISO 3200 can be selected when you record movies. If you start movie recording with a value of ISO 3200 or larger selected, the ISO sensitivity is switched to ISO 3200. When you finish recording your movie, the ISO sensitivity setting returns to the previous value.
- When [ISO] is set to [Multi Frame Noise Reduct.], [AUTO] is temporarily selected.
- You cannot select [Soft Focus], [HDR Painting], [Rich-tone Mono.], or [Miniature] in [Picture Effect]. When movie recording starts, [Picture Effect] is temporarily set to [Off].
- [Clear Image Zoom] cannot be used during movie recording.

Digital Zoom

You can use the digital zoom feature during movie recording. The quality, however, will deteriorate because image processing is performed.

1 Press the ZOOM button.

ZOOM button



- Digital zoom is available during movie recording even when [Digital Zoom] is set to [Off] in the Still shooting menu.

2 Magnify the image up to the desired zoom factor using ◄/► on the control button.

- A zoom factor of up to about 4 times is available.

Changing the tracking sensitivity of autofocus during movie recording

When you record fast moving subjects, select [High], and when several subjects are moving or crossing back and forth, select [Low].

MENU button → 1 → [AF Track. Duration] → Select the desired setting

Recording movies with the shutter speed and aperture adjusted

You can record movies with the shutter speed and aperture adjusted, controlling the background defocus or fluidity as you like.

1 Set the focus mode switch to MF (page 114).

2 Set the mode dial to (Movie).

3 Select the desired mode using ▲/▼ on the control button, then press the center of the control button.

- To change the mode, press the Fn button, then select another mode.

4 Adjust the shutter speed and aperture value using the control dial.

5 Adjust the focus, then press the MOVIE button to start recording.

P (Program Auto) (91)	Allows you to shoot with the exposure adjusted automatically (both the shutter speed and the aperture value). The other settings can be adjusted manually, and your setting values can be saved.
A (Aperture Priority) (92)	Allows you to shoot after adjusting the aperture value manually using the control dial.

S (Shutter Priority) (94)	Allows you to shoot after adjusting the shutter speed manually using the control dial.
M (Manual Exposure) (96)	Allows you to shoot after adjusting the exposure manually (both the shutter speed and the aperture value) using the control dial.

File Format

MENU button → 1 → [File Format] → Select the desired format

AVCHD	Records 60i/50i movies or 24p/25p movies in AVCHD format. This file format is suitable for viewing the movie on a high-definition TV. You can create a Blu-ray disc, an AVCHD recording disc, or a DVD-Video disc using the software “PlayMemories Home.” • 60i/50i movies are recorded at either 60 fields/second or 50 fields/second, respectively. Both 60i and 50i movies utilize the interlace scanning system, Dolby Digital audio, and the AVCHD format. • 24p/25p movies are recorded at either 24 frames/second or 25 frames/second, respectively. Both 24p and 25p movies utilize the progressive scanning system, Dolby Digital audio, and the AVCHD format.
MP4	Records mp4 (AVC) movies. This format is suitable for WEB uploads, e-mail attachments, etc. • Movies are recorded in MPEG-4 format at about 30 frames/second, utilizing the progressive scanning system, AAC audio, and the mp4 format. • You cannot create a disc from the movies recorded in this format using the software “PlayMemories Home.”

Record Setting

The higher the average bit-rate, the higher the image quality.

MENU button → 1 → [Record Setting] → Select the desired setting

[File Format]: [AVCHD]

Record Setting	Bit-rate	Recording
60i 24M(FX)* 50i 24M(FX)**	Maximum 24 Mbps	Records high image quality movies at 1920 × 1080 (60i/50i).
60i 17M(FH)* 50i 17M(FH)**	Average 17 Mbps	Records standard image quality movies at 1920 × 1080 (60i/50i).
24p 24M(FX)* 25p 24M(FX)**	Maximum 24 Mbps	Records high image quality movies at 1920 × 1080 (24p/25p). This produces a cinema-like atmosphere.
24p 17M(FH)* 25p 17M(FH)**	Average 17 Mbps	Records standard image quality movies at 1920 × 1080 (24p/25p). This produces a cinema-like atmosphere.

[File Format]: [MP4]

Record Setting	Average bit-rate	Recording
1440×1080 12M	12 Mbps	Records movies at 1440 × 1080.
VGA 3M	3 Mbps	Records movies at VGA size.

* 1080 60i-compatible device
**1080 50i-compatible device

Notes

- Movies recorded with the [60i 24M(FX)]/[50i 24M(FX)] or [24p 24M(FX)]/[25p 24M(FX)] setting in [Record Setting] are converted by “PlayMemories Home” in order to create an AVCHD recording disc. This conversion can take a long time. Also, you cannot create a disc with the original image quality. If you want to keep the original image quality, store your movies on a Blu-ray disc.
- To watch 24p/25p movies on a TV, you need a TV that is compatible with 24p/25p. If you use a non-compatible TV, the movies are converted to 60i/50i and output to the TV.

Audio Recording

When you record movies, the operating noise of the camera or lens may be recorded. You can record movies without audio.

MENU button → 1 → [Audio Recording] → [Off]

When the focus mode is set to manual focus, the operating noise of the lens during autofocus will not be recorded (page 114).

To reduce wind noise

You can reduce wind noise by cutting bass sound input from the built-in microphone.

MENU button → 1 → [Wind Noise Reduct.] → [On]

Notes

- Setting [Wind Noise Reduct.] to [On] may cause some bass sound to be recorded at too low a volume. Select [Off] when the wind is not blowing.
- When an external microphone (sold separately) is used, [Wind Noise Reduct.] does not function.

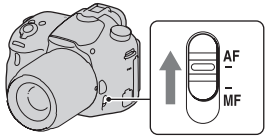
Adjusting the focus

There are 2 methods for adjusting the focus: autofocus and manual focus. Depending on the lens, the method for switching between the autofocus and manual focus is different.

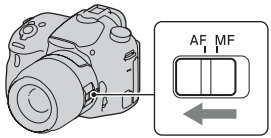
The type of lens	The switch to be used	To switch to auto focus	To switch to manual focus
Lens equipped with a focus mode switch	Lens (Always set the focus mode switch on the camera to AF.)	Set the focus mode switch on the lens to AF.	Set the focus mode switch on the lens to MF.
Lens not equipped with a focus mode switch	Camera	Set the focus mode switch on the camera to AF.	Set the focus mode switch on the camera to MF.

Autofocus

1 Set the focus mode switch on the camera to AF.

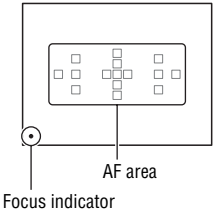


2 When the lens is equipped with the focus mode switch, set it to AF.



3 Press the shutter button halfway down to check the focus and shoot the image.

- When the focus is confirmed, the focus indicator changes to ● or ((●)) (below).
- The AF area in which the focus has been confirmed turns green.



Notes

- While the camera is focusing automatically, do not touch the rotating focusing ring.

Shooting technique

- To select the AF area used for focusing, set up [AF area] (page 110).

Focus indicator

Focus indicator	Status
● lit	Focus locked. Ready to shoot.
((●)) lit	Focus is confirmed. Focal point moves following a moving subject. Ready to shoot.
(( )) lit	Focusing in progress. You cannot release the shutter.
● flashing	Cannot focus. The shutter is locked.

Subjects that may require special focusing

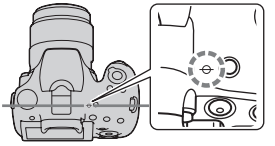
When using the autofocus, it is hard to focus on the following subjects. In such cases, use the focus lock shooting feature (page 108) or manual focus (page 114).

- A subject that is low in contrast, such as blue sky or a white wall.
- Two subjects at different distances overlapping in the AF area.
- A subject that is composed of repeating patterns, such as the facade of a building.
- A subject that is very bright or glittering, such as the sun, the body of an automobile, or the surface of water.
- Ambient light is not sufficient.

To measure the exact distance to the subject

The ⊖ mark located on the top of the camera shows the location of the image sensor*. When you measure the exact distance between the camera and the subject, refer to the position of the horizontal line.

* The image sensor is the part of the camera that acts as the film.



Notes

- If the subject is closer than the minimum shooting distance of the attached lens, the focus cannot be confirmed. Make sure to place enough distance between the subject and the camera.

Focus-lock

1 Place the subject within the AF area and press the shutter button halfway down.

The focus is locked.

- Set [Autofocus Mode] to [Single-shot AF].

2 Keep pressing the shutter button halfway down, and place the subject back in the original position to re-compose the shot.

3 Press the shutter button down fully to take the picture.

Autofocus Mode

Fn button → AF-A (Autofocus Mode) → Select the desired setting

AF-S (Single-shot AF)	The camera focuses and the focus is locked when you press the shutter button halfway down.
AF-A (Automatic AF)	[Autofocus Mode] switches between [Single-shot AF] and [Continuous AF] based on the movement of the subject. When you press and hold the shutter button halfway down, if the subject is motionless, the focus is locked and if the subject is in motion, the camera continues to focus.
AF-C (Continuous AF)	The camera continues to focus while the shutter button is pressed and held halfway down. • The audio signals will not sound when the subject is in focus. • Focus-lock cannot be used.

Shooting techniques

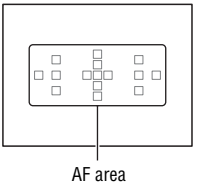
- Use [Single-shot AF] when the subject is motionless.
- Use [Continuous AF] when the subject is in motion.

Notes

- [Automatic AF] is selected when the exposure mode is set to [Intelligent Auto], [Superior Auto] or one of the following [Scene Selection] modes: [Portrait], [Landscape], [Sunset], [Night Scene], [Night Portrait], or [Hand-held Twilight].
- [Single-shot AF] is selected when the exposure mode is set to [Sweep Panorama] or [Macro] in [Scene Selection].
- [Continuous AF] is selected when the exposure mode is set to [Sports Action] in [Scene Selection] or when the Smile Shutter function is used.

AF area

Select the desired AF area to suit the shooting conditions or your preference. The AF area where the focus has been confirmed turns green and the other AF areas disappear.



Fn button → [ ] (AF area) → Select the desired setting

[ ] (Wide)	The camera determines which of the 15 AF areas is used in focusing.
(Zone)	Choose the zone for which you want to activate the focus from among left, right, or center zone using the control button. The camera determines which of the AF areas in the selected zone is used in focusing. Press the AF button so that the setup screen appears, and then select the desired zone.
(Spot)	The camera uses the AF area located in the center area exclusively.
(Local)	Choose the area for which you want to activate the focus from among 15 AF areas using the control button. Press the AF button to display the setup screen and select the desired area.

Notes

- [AF area] is fixed to [Wide] and you cannot select other settings when the exposure mode is set to [Intelligent Auto], [Superior Auto] or [Scene Selection], or when the [Lock-on AF] function is being used or the Smile Shutter is activated.
- The AF area may not be illuminated during continuous shooting or when the shutter button is pressed all the way down without pause.
- When [Lock-on AF] is set to [On], the setup screen used for the [Zone] or [Local] option is not displayed by pressing the AF button.

AF Illuminator

You can set the AF illuminator to focus on a subject under dark lighting.

MENU button → 2 → [AF Illuminator] → Select the desired setting

- Since the camera uses the built-in flash as an AF illuminator, press the ↯ button to open the flash.

- The AF illuminator does not operate when [Autofocus Mode] is set to AF-C (Continuous AF) or the subject is moving in AF-A (Automatic AF). (The ◉ or ⦅⦆ indicator lights.)
- The AF illuminator may not operate at focal lengths of 300 mm or longer.
- When an external flash (sold separately) with an AF illuminator is attached, the AF illuminator of the external flash is used. Push the built-in flash down.
- The AF illuminator does not operate when [Smile Shutter] is set to [On].

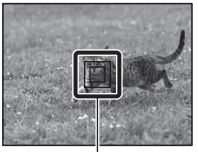
Lock-on AF

Keeps the focus on a moving subject while tracking it. When [Autofocus Mode] is set to [Continuous AF], [On(Lock-on AF w/ shutter)] will function.

1 Set [Autofocus Mode] to [Continuous AF] (page 109).

2 Fn button → ▣ON (Lock-on AF) → [On(Lock-on AF w/ shutter)]

3 Press the shutter button halfway down so that the camera automatically locks onto a target and tracks the subject.



The camera continues to focus while the shutter button is pressed and held halfway down. When the subject is in focus, the target frame turns green.

4 Press the shutter button to shoot the subject.

When [AF area] is set to [Wide], the camera starts tracking the subject around the center area.

The camera focuses on the subject using all areas during tracking.

- The camera can start tracking the subject from the selected area when [AF area] is set to [Local], [Spot], or [Zone].

Shooting techniques

- To capture persons, you can detect and track the person's face using the following settings: [Lock-on AF] is set to [On(Lock-on AF w/ shutter)], [AF area] is set to [Wide], and [Smile/Face Detect.] is set to [Face Detection On]
- When the subject is small on the Live View screen, you can track the subject certainly by setting the autofocus area in advance using the following settings: [Lock-on AF] is set to [On(Lock-on AF w/ shutter)], [AF area] is set to [Local] or [Zone].

To change the mode

Fn button → [ON] (Lock-on AF) → [On] or [Off].

[ON] (On)	Press the center of the control button on the recording information display to display a target frame. Align the target frame with the subject to be tracked, and press the center of the control button. The camera starts tracking the subject. When the subject is in focus, the target frame turns green. To cancel the tracking feature, press the center of the control button again.
[OFF] (Off)	Deactivates the [Lock-on AF] function.

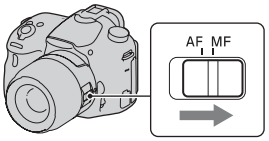
Notes

- [Lock-on AF] may be difficult in the following situations:
  - The subject is moving too quickly.
  - The subject is too small or too large.
  - The contrast between the subject and the background is poor.
  - The subject is in dark lighting conditions.
  - The ambient light changes.
- [Lock-on AF] cannot be used when the exposure mode is set to [Sweep Panorama], [Tele-zoom Cont. Priority AE], or [Hand-held Twilight] in [Scene Selection], or when manual focus is selected.
- The camera stops tracking a subject when the subject moves off the screen.

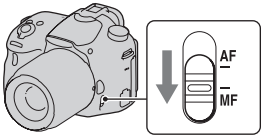
Manual focus

When it is difficult to get the proper focus in autofocus mode, you can adjust the focus manually.

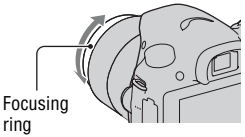
1 Set the focus mode switch on the lens to MF.



2 If the lens is not equipped with a focus mode switch, set the focus mode switch on the camera to MF.



3 Rotate the focusing ring of the lens to achieve sharp focus.



Notes

- When the Wide AF area is used, the center area is used for focusing; when the Zone AF area is used, a typical area of the selected zone is used; and when the Local AF area is used, an area that is selected using the control button is used.
- When using a teleconverter (sold separately), etc., rotation of the focusing ring may not be smooth.
- The correct focus in the viewfinder is not achieved if the diopter is not adjusted properly in viewfinder mode (page 29).
- Make sure to set the focus mode switch on the lens to MF for manual focus. Rotating the focusing ring forcibly without switching to MF may damage it.

Direct manual focus

When a lens that is equipped with a direct manual focus function is mounted and [Autofocus Mode] is set to [Single-shot AF] or [Automatic AF], you can make fine adjustments using the focusing ring after the focus is locked (DT 18-135mm F3.5-5.6 SAM, etc.). You can quickly focus on a subject rather than using the manual focus from the beginning. This is convenient in cases such as macro shooting.

Peaking

You can enhance the outline of in-focus ranges with a specific color in manual focus. This function allows you to confirm the focus easily.

MENU button → ☼ 2 → [Peaking Level] → Select the desired setting

Notes

- Since the camera judges that sharp areas are in focus, the peaking level differs, depending on the subject, shooting situation, or the lens used.
- The outline of in-focus ranges is not enhanced when the camera is connected using an HDMI cable.

To set the color of the peaking function

You can set the color used for the peaking function in manual focus.

MENU button → ☼ 2 → [Peaking Color] → Select the desired setting

Notes

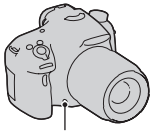
- [Peaking Color] cannot be set when [Peaking Level] is set to [Off].

Focus Magnifier

You can check the focus by enlarging the image before shooting.

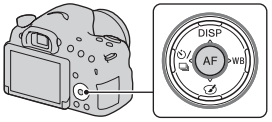
1 MENU button → ✿ 3 → [Preview Button] → [Focus Magnifier]

2 Press the Focus Magnifier button.



Focus Magnifier button

3 Press the Focus Magnifier button again to enlarge the image and select the portion you want to enlarge using ▲/▼/◄/► on the control button.



- Each time you press the Focus Magnifier button, the magnifier scaling changes as follows: Full display → Approx. ×6.8 → Approx. ×13.6

4 Confirm and adjust the focus.

- Rotate the focusing ring to adjust the focus in manual focus mode.
- If you press the AF button, the enlarged portion returns to the center.
- The [Focus Magnifier] function is canceled if you press the shutter button halfway down.

5 Press the shutter button fully down to shoot the image.

- You can record images while an image is enlarged, but the camera records a full-display image.
- The [Focus Magnifier] function will be released after shooting.

Detecting faces

Face Detection

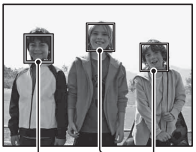
The camera detects faces, adjusts the focus and exposure, performs image processing, and adjusts flash settings.

Fn button → (Smile/Face Detect.) → Select the desired setting

Face Detection Off	Turns off Face Detection.
Face Detection On (Regist. Faces)	Enables Face Detection and prioritizes recognized faces that have been registered in [Face Registration] (page 118).
Face Detection On	Enables Face Detection, but does not prioritize recognized faces.
Smile Shutter	Detects and shoots a smile automatically.

The Face Detection frame

When the camera detects faces, gray Face Detection frames appear. When the camera judges that autofocus is possible, the Face Detection frame turns white. When you press the shutter button halfway down, the Face Detection frame turns green.



- If a face is not positioned inside the AF area available when you press the shutter button halfway down, the AF area that is used for focusing turns green.
- When the camera detects multiple faces, the camera automatically selects a priority face and a single Face Detection frame turns white. A magenta frame appears on a face that is registered with [Face Registration].

Shooting technique

- Compose to overlay the Face Detection frame and the AF area.

Notes

- When the exposure mode is [Sweep Panorama] or [Tele-zoom Cont. Priority AE], [Face Detection] cannot be used.
- Up to 8 faces can be detected.
- The camera may not detect any faces, or may detect some other object, depending on the shooting conditions.

Face Registration

The camera detects faces for which information has been registered in advance.

1 MENU button → ☼ 4 → [Face Registration] → [New Registration]

2 Align the guide frame with the face to be registered, and press the shutter button.

3 Select [Enter] using ▲/▼ on the control button, then press the center of the control button.

- Up to 8 faces can be registered.
- Shoot the face from the front in a brightly lit place. The face may not be registered correctly if it is obscured by a hat, a mask, sunglasses, etc.

To change the priority of faces previously registered

When you have registered multiple faces, the priority order is set. You can change the priority order.

MENU button → ☼ 4 → [Face Registration] → [Order Exchanging] → Select a face for which you want to change the priority and the priority level

To delete a registered face

You can delete a registered face.

MENU button → ☼ 4 → [Face Registration] → [Delete] → Select the face you want to delete

- When you select [Delete All], you can delete all registered faces at one time.

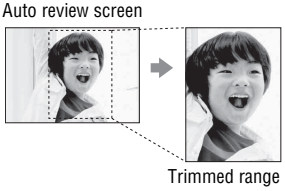
Notes

- Even if you select [Delete], the data on registered faces remains stored in the camera. If you want to delete this data from the camera, select [Delete All].
- Registered faces are not deleted even if you use [Initialize].

Auto Object Framing

When shooting faces, close-ups, or subjects tracked by [Lock-on AF], the camera analyzes the scene and automatically trims the image into a suitable composition. Both the original and the trimmed images are saved.

- 囗AUTO turns to green when the trimming feature is available in Live View mode.
- The frame used for trimming is indicated on the auto review screen after shooting.



To change the setting of [Auto Object Framing]

The default setting is [Auto].

Fn button → 囗AUTO (Auto Object Framing) → Select the desired setting

Notes

- The [Auto Object Framing] function cannot be used when the exposure mode is set to [Sweep Panorama], [Tele-zoom Cont. Priority AE], [Movie], or [Hand-held Twilight] or [Sports Action] in [Scene Selection].
- The trimmed image may not be the best possible composition, depending on the shooting conditions.

- When [Quality] is set to [RAW] or [RAW & JPEG], this function cannot be used.
- This feature cannot be used with the following functions: Continuous shooting, continuous bracket, [Multi Frame Noise Reduct.], [Auto HDR], the zoom feature of the camera, manual focus, or [Soft Focus], [HDR Painting], [Rich-tone Mono.], or [Miniature] in [Picture Effect].

Smile Shutter

When the camera detects a smile, the shutter is released automatically.

1 Fn button → (Smile/Face Detect.) → [Smile Shutter On: Normal Smile] → Select the desired Smile Detection Sensitivity mode using ◄/► on the control button

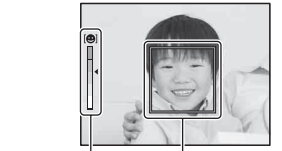
You can set the sensitivity of the Smile Shutter function for detecting smiles to one of the following 3 options: (On: Slight Smile), (On: Normal Smile), and (On: Big Smile).

- When the Smile Shutter is activated, the Smile Detection Sensitivity indicator appears on the screen.

2 Wait detecting a smile.

The camera detects a smile and the focus is confirmed. When the smile level exceeds the ◄ point on the indicator, the camera records images automatically.

- When the camera detects target faces, orange Face Detection frames appear around the faces. The Face Detection frames turn green when these subjects come into focus.
- When [Auto Object Framing] is set to [Auto], the image will be automatically trimmed to provide a suitable composition.



3 To stop shooting, Fn button → (Smile/Face Detect.) → Select an item other than [Smile Shutter].

Shooting techniques

- To focus on the smile, overlay the Face Detection frame and AF area.
- Do not cover the eyes with bangs, etc. Keep the eyes narrowed.
- Do not obscure the face with a hat, a mask, sunglasses, etc.
- Try to orient the face in front of the camera and keep it as level as possible.
- Hold a clear smile with an open mouth. The smile is easier to detect when the teeth are showing.
- If you press the shutter button while the Smile Shutter function is activated, the camera shoots the image, and then returns to Smile Shutter.

Notes

- The [Smile Shutter] function cannot be used when the exposure mode is set to [Sweep Panorama], [Tele-zoom Cont. Priority AE], [Movie], or [Hand-held Twilight] in [Scene Selection], or when manual focus is selected.
- [Drive Mode] is automatically set to [Single Shooting].
- The AF illuminator does not work with the Smile Shutter function.
- If the camera does not detect a smile, change the settings for Smile Detection Sensitivity.
- Smiles may not be detected correctly, depending on the shooting conditions.
- If the camera tracks a face using [Lock-on AF] with Smile Shutter turned on, the face becomes the target of the smile detection feature (page 111).

Adjusting the brightness of the image

AE Lock

When shooting into the sun or by a window when the exposure may not be appropriate for the subject, use the light meter where the subject is bright enough and lock the exposure before shooting. To reduce the brightness of the subject, point the camera toward a spot that is brighter than the subject and use the light meter to lock the exposure of the entire image. To make the subject brighter, point the camera toward a spot that is darker than the subject and use the light meter to lock the exposure of the entire image. This section describes how to shoot a brighter image of the subject using the ⊡ (Spot).

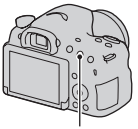
1 Fn button → ⊡ (Metering Mode) → ⊡ (Spot)

2 Adjust the focus where you want to lock the exposure.

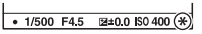
3 Press the AEL button to lock the exposure.

The ✱ (AE lock) icon appears.

- The exposure value based on the locked exposure in the spot metering circle is also indicated on the EV scale.



AEL button



4 While pressing the AEL button, focus on the subject and shoot.

- If you continue to shoot with the same exposure value, press and hold the AEL button after shooting. The setting is canceled when the button is released.

AEL w/ shutter

Sets whether to fix the exposure when you press the shutter button halfway down.

MENU button → 3 → [AEL w/ shutter] → Select the desired setting

Notes

• AEL button operation is given priority over the [AEL w/ shutter] settings.

Metering Mode

Fn button → (Metering Mode) → Select the desired mode

(Multi segment)	This mode measures light in each area after dividing the total area into multiple areas and determines the proper exposure of the entire screen.
(Center weighted)	While emphasizing the central area of the screen, this mode measures the average brightness of the entire screen.
(Spot)	This mode measures light only in the spot metering circle located in the center area.

Shooting techniques

• Use [Multi segment] metering for general shooting.
• When there is a high contrast subject in the AF area, measure the light of the subject you want to shoot with the optimal exposure using the spot metering function and take advantage of AE lock shooting (page 122).

Notes

• When the exposure mode is set to [Intelligent Auto], [Superior Auto], or [Scene Selection], or when the zoom feature of the camera is used, [Metering Mode] is fixed to [Multi segment] and you cannot select other modes.

Flash Comp.

When shooting with the flash, you can adjust the amount of flash light alone, without changing the exposure compensation. You can only change the exposure of the main subject within the flash range.

Fn button → ⚡ (Flash Comp.) → Select the desired setting

Toward +: Makes the flash level higher.
Toward –: Makes the flash level lower.

Notes

- [Flash Comp.] cannot be set when the exposure mode is set to [Intelligent Auto], [Superior Auto], [Sweep Panorama], or [Scene Selection].
- The higher flash effect may not be visible due to the limited amount of flash light, if the subject is outside the maximum range of the flash. If the subject is very close, the lower flash effect may not be visible.

Exposure compensation and flash compensation

Exposure compensation changes the shutter speed, aperture, and ISO sensitivity (when [AUTO] is selected) to perform the compensation. Flash compensation only changes the amount of flash light.

Flash control

MENU button → 📷 2 → [Flash control] → Select the desired setting

ADI flash	Controls the lighting of the flash, factoring in the focus distance information and light metering data from the pre-flash. This method enables accurate flash compensation with virtually no effect from reflection off the subject.
Pre-flash TTL	Controls the amount of flash light depending only on the data from pre-flash light metering. This method is susceptible to reflection off the subject.

ADI: Advanced Distance Integration
TTL: Through The Lens

- When [ADI flash] is selected, using a lens that is provided with a distance encoder feature provides more accurate flash compensation by using more accurate distance information.

Notes

- When the distance between the subject and the external flash (sold separately) cannot be determined (wireless flash shooting using an external flash (sold separately), shooting with an off-camera flash using a cable, shooting with a macro twin flash, etc.), the camera automatically selects [Pre-flash TTL].
- Select [Pre-flash TTL] in the following cases, as the camera cannot perform flash compensation with [ADI flash].
  - A wide panel is attached to the HVL-F36AM flash.
  - A diffuser is used for flash shooting.
  - A filter with an exposure factor, such as an ND filter, is used.
  - A close-up lens is used.
- ADI flash is only available in combination with a lens that is provided with a distance encoder. To determine if the lens is equipped with a distance encoder, refer to the operating instructions supplied with the lens.
- [Flash control] cannot be set when the exposure mode is set to [Sweep Panorama] or [Night Scene]/[Hand-held Twilight] in [Scene Selection].

The flash

Press the Fn button, select the desired flash mode, press the ϟ button, and shoot images (page 41).

Shooting techniques

- The lens hood may block the light of the flash. Remove the lens hood when using the flash.
- When using the flash, shoot the subject at a distance of 1 m (3.3 feet) or greater.
- When shooting indoors or shooting nightscapes, you can use slow sync to shoot a brighter image of people and backgrounds.
- You can use rear sync to shoot a natural image of the trail of moving subjects, such as a moving bicycle.
- When using the HVL-F60M/HVL-F58AM/HVL-F43AM Flash (sold separately), you can shoot with the High-speed sync feature at any shutter speed. For details, refer to the operating instructions supplied with the flash.

Notes

- Do not hold the camera by the flash emitter.
- Shooting conditions required to prevent shadows from appearing on an image vary, depending on the lens.
- When the exposure mode is set to [Intelligent Auto], [Superior Auto], or [Scene Selection], the [Slow Sync.], [Rear Sync.], and [Wireless] items cannot be selected.
- When the exposure mode is set to P, A, S, M, or [Tele-zoom Cont. Priority AE], the [Flash Off] or [Autoflash] items cannot be selected. If you do not want to use the flash, push the flash down.
- If you use the flash with a stereo microphone or similar device attached to the Multi interface shoe, the flash may not pop up to the correct position and recorded images may have shadows in their corners. Remove any device from the Multi interface shoe.

Wireless flash

With a flash that has a wireless shooting function (sold separately), you can shoot with the flash without a cord, even when the flash is not attached to the camera. By changing the position of the flash, you can shoot an image with a three-dimensional feel by highlighting the contrast of light and shadow on the subject.
For the actual steps of shooting, refer to the operating instructions of the flash.

1 Attach the wireless flash to the Multi interface shoe and turn both the camera and the flash on.

2 Fn button → ⚡ (Flash Mode) → ⚡WL (Wireless)

3 Remove the wireless flash from the Multi interface shoe and pop up the built-in flash.

- To perform a test fire of the flash, press the AEL button.

Notes

- Turn off the wireless flash mode after wireless flash shooting. If the built-in flash is used while the wireless flash mode is still active, inaccurate flash exposures will result.
- Change the external flash channel when another photographer is using a wireless flash nearby and his/her flash light causes your external flash to fire. To change the external flash channel, refer to the operating instructions supplied with the flash.

Setup of the AEL button

When using a wireless flash, we recommend that you set [Func. of AEL button] to [AEL hold] in the ✿ Custom menu (page 161).

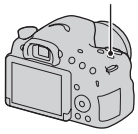
Wireless flash with lighting ratio control

You can use the wireless lighting ratio control in combination with multiple flashes. For details, refer to the operating instructions supplied with flash (HVL-F60M (sold separately), HVL-F58AM (sold separately), or HVL-F43AM (sold separately)).

Setting ISO

Sensitivity to light is expressed by the ISO number (recommended exposure index). The larger the number, the higher the sensitivity.

1 Press the ISO button to display the ISO screen.



2 Select the desired setting using ▲/▼ on the control button.

- The larger the number, the higher the noise level.
- If you want to select [Multi Frame Noise Reduct.], display the setup screen using ►, and select the desired value using ▲/▼.

Notes

- When the exposure mode is set to [Intelligent Auto], [Superior Auto], [Sweep Panorama], or [Scene Selection], [ISO] is fixed to [AUTO] and you cannot select other ISO numbers.
- When the exposure mode is set to P/A/S/M and [ISO] is set to [AUTO], [ISO] is automatically set between ISO 100 and ISO 3200.

Multi Frame Noise Reduct.

The camera automatically shoots multiple images continuously, combines the images, reduces the noise, and records 1 image.
With multi frame noise reduction, you can select larger ISO numbers than the maximum ISO sensitivity.
The image recorded is 1 combined image.

Notes

- When [Quality] is set to [RAW] or [RAW & JPEG], this function cannot be used.
- The flash, [D-Range Opt.], and [Auto HDR] cannot be used.

Compensating for brightness and contrast automatically (D-Range)

Fn button → (DRO/Auto HDR) → Select the desired setting

(Off)	Does not use the DRO/Auto HDR functions.
(D-Range Opt.)	By dividing the image into small areas, the camera analyzes the contrast of light and shadow between the subject and the background, producing an image with the optimal brightness and gradation.
(Auto HDR)	Shoots 3 images with different exposures, and then overlays the correctly exposed image, the bright areas of the under-exposed image and the dark areas of the over-exposed image to create an image with rich gradation. 2 images are recorded: an image with the correct exposure and an overlaid image.

D-Range Opt.

1 Fn button → (DRO/Auto HDR) → (D-Range Opt.)

2 Select an optimal level using ◄/► on the control button.

(D-Range Optimizer: Auto)	Corrects the brightness automatically.
(Level)*	Optimizes the gradations of the recorded image in each area of the image. Select the optimal level between Lv1 (weak) and Lv5 (strong).

* Lv_ displayed with is the step currently selected.

Notes

- The setting is fixed to [Off] when the exposure mode is set to [Sweep Panorama], or when [Multi Frame Noise Reduct.] or [Picture Effect] is used.
- The setting is fixed to [Off] when [Sunset], [Night Scene], [Night Portrait], or [Hand-held Twilight] is selected in [Scene Selection]. The setting is fixed to [Auto] when other modes are selected in [Scene Selection].
- When shooting with the D-Range Optimizer, the image may be noisy. Select the proper level by checking the recorded image, especially when you enhance the effect.

Auto HDR

1 Fn button → (DRO/Auto HDR) → (Auto HDR)

2 Select an optimal level using ◄/► on the control button.

(Auto HDR: Exposure Diff. Auto)	Corrects the exposure difference automatically.
(Exposure Difference Level)*	Sets the exposure difference based on the contrast of the subject. Select the optimal level between 1.0 EV (weak) and 6.0 EV (strong). For example: When 2.0 EV is selected, 3 images are overlaid: an image with –1.0 EV, an image with the correct exposure, and an image with +1.0 EV.

* _EV displayed with is the step currently selected.

Shooting technique

- Since the shutter is released 3 times for a single shot, be cautious of the following:
  – Use this function when the subject is motionless or does not blink.
  – Do not recompose.

Notes

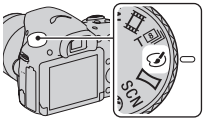
- You cannot use this function on RAW images.
- When the exposure mode is set to [Intelligent Auto], [Superior Auto], [Sweep Panorama], [Tele-zoom Cont. Priority AE] or [Scene Selection], or when [Multi Frame Noise Reduct.] is selected, you cannot select [Auto HDR].
- You cannot start the next shot until the capture process is completed after you shoot.
- You may not obtain the desired effect depending on the luminance difference of a subject and the shooting conditions.
- When the flash is used, this function has little effect.
- When the contrast of the scene is low or when camera shake or subject blur occurs, you may not obtain good HDR images. If the camera has detected a problem, HDR ! is displayed on the recorded image to inform you of this situation. Shoot again as necessary, paying attention to the contrast or blur.

Setting image processing

Picture Effect

Select the desired effect filter to achieve more impressive and artistic images.

Set the mode dial to (Picture Effect), and select the desired setting.



- For a mode that has a fine adjustment option, select the desired setting using ◀/▶.

(Toy Camera)	Creates the look of a Toy Camera photo with shaded corners and pronounced colors. You can set the color tone using ◀/▶.
(Pop Color)	Creates a vivid look by emphasizing color tones.
(Posterization)	Creates a high contrast, abstract look by heavily emphasizing primary colors, or using black and white. You can select primary colors or black and white using ◀/▶.
(Retro Photo)	Creates the look of an aged photo with sepia color tones and faded contrast.
(Soft High-key)	Creates an image with the indicated atmosphere: bright, transparent, ethereal, tender, soft.
(Partial Color)	Creates an image that retains 1 specific color, but converts others to black and white. You can select a color using ◀/▶.
(High Contrast Mono.)	Creates a high-contrast image in black and white.
(Soft Focus)	Creates an image with a soft lighting effect. You can set the intensity of the effect using ◀/▶.
(HDR Painting)	Creates the look of a painting, enhancing the colors and details. The camera releases the shutter 3 times. You can set the effect intensity using ◀/▶.
(Rich-tone Mono.)	Creates an image in black and white with rich gradation and reproduction of details. The camera releases the shutter 3 times.

(Miniature)	Creates an image that enhances the subject vividly, with the background defocused considerably. This effect can often be found in pictures of miniature models. You can select the area to be in focus using ◄/►. The focus on other areas is greatly reduced.

- (Off) can be selected if you use (Picture Effect) on the control button.

Notes

- When the zoom feature of the camera is used, the [Toy Camera] and [Miniature] effects are not available.
- When [Partial Color] is selected, images may not retain the selected color, depending on the subject or shooting conditions.
- When the exposure mode is set to [Intelligent Auto], [Superior Auto], [Sweep Panorama] or [Tele-zoom Cont. Priority AE], or when [Quality] is set to [RAW] or [RAW & JPEG], [Picture Effect] cannot be used.
- When [HDR Painting], [Miniature], [Rich-tone Mono.] or [Soft Focus] is selected, you cannot confirm the effect before shooting. You also cannot set the drive mode.
- When the contrast of the scene is low or when significant camera shake or subject blur has occurred with [HDR Painting] or [Rich-tone Mono.] selected, you may not obtain good HDR images. If the camera detects such a situation, is displayed on the recorded image. Shoot again as necessary, recomposing or paying attention to the blur.

Creative Style

You can select the desired style to be used to perform image processing, and adjust the contrast, saturation, and sharpness for each [Creative Style]. You can also adjust the exposure (shutter speed and aperture), unlike [Scene Selection], in which the camera adjusts the exposure.

1 Fn button → (Creative Style) → Select the desired setting

2 If you want to adjust (Contrast), (Saturation), or (Sharpness), select the desired item using ◄/► on the control button, then adjust the value using ▲/▼.

(Standard)	For shooting various scenes with rich gradation and beautiful colors.
(Vivid)	The saturation and contrast are heightened for shooting striking images of colorful scenes and subjects such as flowers, spring greenery, a blue sky, or ocean views.
(Portrait)	For shooting the skin color in a soft tone, ideally suited to shooting portraits.
(Landscape)	The saturation, contrast, and sharpness are heightened for shooting vivid and crisp scenery. Distant landscapes also stand out more.
(Sunset)	For shooting the beautiful red of the setting sun.
(Black & White)	For shooting images in black and white.

◑ (Contrast), ✿ (Saturation), and ◧ (Sharpness) can be adjusted for each Creative Style item.

◑ (Contrast)	The higher the value selected, the more the difference between light and shadow is accentuated, thus making an impact on an image.
✿ (Saturation)	The higher the value selected, the more vivid the color. When a lower value is selected, the color of the image is restrained and subdued.
◧ (Sharpness)	Adjusts the sharpness. The higher the value selected, the more the contours are accentuated, and the lower the value selected, the more the contours are softened.

Notes

- When the exposure mode is set to [Intelligent Auto], [Superior Auto] or [Scene Selection], or [Picture Effect] mode is selected, [Creative Style] is fixed to [Standard] and you cannot select other settings.
- When [Black & White] is selected, you cannot adjust the saturation.

Adjusting color tones (White Balance)

The color tone of the subject changes depending on the characteristics of the light source. The table below shows how the color tone changes based on various light sources, compared with a subject that appears white under the sunlight.

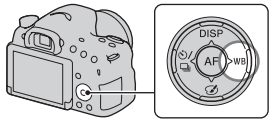
Weather/ lighting	Daylight	Cloudy	Fluorescent	Incandescent
Characteristics of light	White	Bluish	Green-tinged	Reddish

Use this feature when the color tone of the image did not come out as you expected, or when you want to change the color tone on purpose for photographic expression.

Notes

- When the exposure mode is set to [Intelligent Auto], [Superior Auto], or [Scene Selection], [White Balance] is fixed to [Auto WB] and you cannot select other modes.
- If the only light source available is a mercury lamp or a sodium lamp, the camera will not be able to acquire an accurate white balance due to the characteristics of the light source. Use the flash in such cases.

WB on the control button → Select the desired setting



- When you select a setting other than [C.Temp./Filter], press ► so that the fine adjustment screen appears and you can adjust the color tone using ▲/▼/◄/► as necessary.

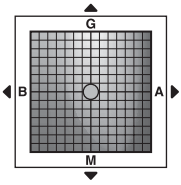
AWB (Auto WB)	The camera automatically detects a light source and adjusts the color tones.
☀ (Daylight)	If you select an option to suit a specific light source, the color tones are adjusted for the light source (preset white balance).
(Shade)	
(Cloudy)	
(Incandescent)	
−1 (Fluor.: Warm White)	
0 (Fluor.: Cool White)	
+1 (Fluor.: Day White)	
+2 (Fluor.: Daylight)	
(Flash)	

Shooting techniques

- Use the white balance bracket function if you cannot get the desired white balance using the selected option (page 146).
- When you select [C.Temp./Filter], you can adjust the value to the desired one (page 138).
- When you select [Custom], you can register your setting (page 138).

Fine adjustment screen for color

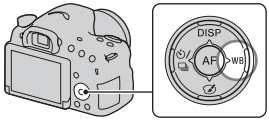
You can perform fine adjustments by combining the color temperature with the color filter.



Color Temp.	Fine-tune color in the B (blue) direction using ◄ and the A (amber) direction using ►.
Color Filter	Fine-tune color in the G (green) direction using ▲ and the M (magenta) direction using ▼.

Color Temp./Color Filter

1 WB on the control button → (C.Temp./Filter) → ►



2 Set the color temperature using ▲/▼ on the control button.

3 Press ► to display the fine adjustment screen and compensate the color to your preference using ▲/▼/◄/►.

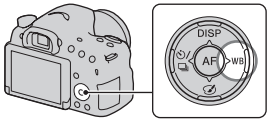
Notes

- Since color meters are designed for film cameras, the values differ under fluorescent/sodium lamp/mercury lamps. We recommend that you use the custom white balance or perform a test shooting.

Custom white balance

In a scene where the ambient light consists of multiple types of light source, use of the custom white balance is recommended in order to accurately reproduce the whiteness.

1 WB on the control button → [SET] → press the center of the control button



2 Hold the camera so that the white area fully covers the AF area located in the center, and then press the shutter button down.

The shutter clicks and the calibrated values (Color Temperature and Color Filter) are displayed.

3 Press the center of the control button.

The screen returns to the recording information display with the memorized custom white balance setting retained.

- The custom white balance setting registered in this operation is effective until a new setting is registered.

Notes

- The message “Custom WB Error” indicates that the value is beyond the expected range, when the flash is used on a subject in close proximity or a subject with a bright color is in the frame. If you register this value, the indicator turns yellow on the recording information display. You can shoot at this point, but it is recommended that you set the white balance again to get a more accurate white balance value.

To call the custom white balance setting

WB on the control button → (Custom)

- Press ▶ to display the fine adjustment screen and compensate the color to your preference.

Notes

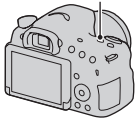
- If the flash is used when the shutter button is pressed, a custom white balance is registered with the flash light taken into account. Take pictures with the flash in later shot.

Zooming

You can magnify images with a higher scale than the optical zoom of the lens.

1 Magnify the image with the zoom ring when using a zoom lens (page 30).

2 Press the ZOOM button.

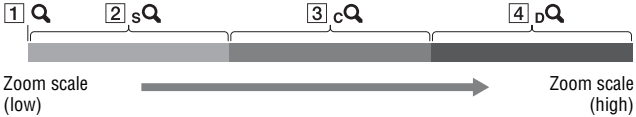


3 Magnify the image to your desired zoom scale using ◄/► on the control button.

- You can magnify the image at wider intervals using ▲/▼.

The zoom features available with this camera

The icon displayed on the screen changes as follows based on the zoom scale.

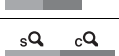


1 : The zoom feature of the camera is not used (×1.0 is indicated).

2 S Smart Zoom: You can magnify images by trimming them slightly. (Available only when [Image Size] is set to M or S.)

3 C [Clear Image Zoom]: You can magnify images using a high-quality image process.

4 D [Digital Zoom]: You can magnify images using an image process.

Setting	Image size	Zoom scale with optical zoom
Zooms images by trimming them in the available range (without deterioration of image quality). [Clear Image Zoom]: [Off] [Digital Zoom]: [Off]	L	–
	M	About 1.4×
	S	About 2×
Gives priority to image quality when zooming images. [Clear Image Zoom]: [On] [Digital Zoom]: [Off]	L	About 2×
	M	About 2.8×
	S	About 4× 
Gives priority to higher magnification when zooming images. [Clear Image Zoom]: [On] [Digital Zoom]: [On]	L	About 4×
	M	About 5.6×
	S	About 8×

Notes

- The zoom feature of the camera is unavailable
  - – When the exposure mode is set to [Sweep Panorama].
  - – When [Quality] is set to [RAW] or [RAW & JPEG].
- The [Clear Image Zoom] is unavailable
  - – When the exposure mode is set to [Tele-zoom Cont. Priority AE].
  - – When [Drive Mode] is set to [Cont. Shooting] or [Bracket: Cont.].
- You cannot use the Smart Zoom or [Clear Image Zoom] function with movies.
- When the electronic zoom is available, [Metering Mode] is set to [Multi segment].

To change the [Clear Image Zoom] setting

The default setting is [On].

MENU button → 2 → [Clear Image Zoom] → Select the desired setting

To change the [Digital Zoom] setting

The default setting is [Off]. If you want to use higher magnification regardless of the deterioration of the image, set it to [On].

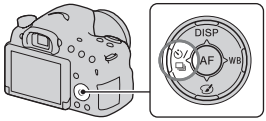
MENU button → 2 → [Digital Zoom] → Select the desired setting

⏲/⧉ Selecting the drive mode

Single Shooting

This mode is for normal shooting.

⏲/⧉ on the control button → □ (Single Shooting)



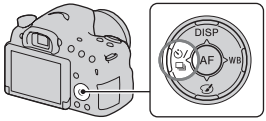
Notes

- When the exposure mode is set to [Sports Action] in [Scene Selection], you cannot use [Single Shooting].

Cont. Shooting

The camera records images continuously.

1 ⏲/⧉ on the control button → ⧉ (Cont. Shooting) → Select the desired speed



2 Adjust the focus and shoot the subject.

- When you press and hold the shutter button, recording continues.

Shooting technique

- To shoot continuously faster, set the exposure mode to [Tele-zoom Cont. Priority AE] (pages 40, 90).
- When [AEL w/ shutter] is set to [Off], the camera continues to adjust the exposure even after the first shot in [Cont. Shooting] or [Tele-zoom Cont. Priority AE] (page 123).

Notes

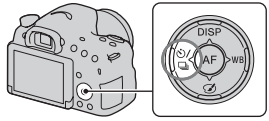
- When Hi is selected, the recorded image is displayed between the shots.
- You cannot shoot continuously when using [Scene Selection] modes other than [Sports Action].

Self-timer

The 10-second self-timer is convenient when the photographer wants to appear in the photo and the 2-second self-timer is convenient for reducing camera shake.

1 / on the control button → (Self-timer) → Select the desired setting

- The number after indicates the currently selected setting.



2 Adjust the focus and shoot the subject.

- When the self-timer is activated, audio signals and the self-timer lamp indicate the condition. The self-timer lamp flashes quickly and the audio signal sounds quickly right before the shooting.

To cancel the self-timer

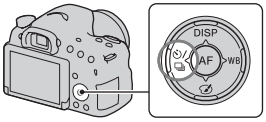
Press / on the control button.

Bracket: Cont./Single Bracket

Base exposure – direction + direction

Bracket shooting allows you to shoot several images, each with different degrees of exposure. Specify the value of deviation (steps) from the base exposure, and the camera shoots 3 images while automatically shifting the exposure.

1 ⏲/▣ on the control button → BRK c (Bracket: Cont.) or BRK s (Single Bracket) → Select the desired bracket step



- _EV displayed with BRK is the currently selected value.

2 Adjust the focus and shoot the subject.

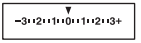
The base exposure is set at the first shot in the bracket.

- Press and hold the shutter button until recording stops when [Bracket: Cont.] is selected.
- Press the shutter button shot by shot when [Single Bracket] is selected.

Notes

- When the mode dial is set to M and [ISO] is set to other than [AUTO], the exposure is shifted by adjusting the shutter speed. When [ISO] is set to [AUTO], the camera changes the ISO sensitivity and adjusts the exposure value.
- When you adjust the exposure, the exposure is shifted based on the compensated value.
- Bracket cannot be used when the exposure mode is set to [Intelligent Auto], [Superior Auto], [Tele-zoom Cont. Priority AE], [Sweep Panorama], or [Scene Selection].
- When using the flash, the camera shifts the amount of flash light using flash bracket shooting. Press the shutter button shot by shot even when [Bracket: Cont.] is selected.

The EV scale in bracket shooting

	Ambient light* bracket (e.g., 0.3 steps, 3 shots, Exposure compensation 0)	Flash bracket (e.g., 0.7 steps, 3 shots, Flash compensation –1.0)
Viewfinder		
LCD screen (When [DISP Button(Monitor)] is set to [For viewfinder])	Shown in the top row.	Shown in the bottom row.

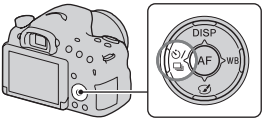
* Ambient light: Any light other than the flash light that shines on the scene for an extended period of time, such as natural light, an incandescent light, or a fluorescent light.

- In bracket shooting, the same number of indices as the number of recordable images is displayed on the EV scale.
- When bracket shooting starts, the indices that indicate already recorded images start to disappear one by one.

WB bracket

Based on the selected white balance and the color temperature/color filter, 3 images are recorded with the white balance shifted.

1 ⏲/▣ on the control button → BRK WB (WB bracket) → Select the desired setting



- When [Lo] is selected, the camera shoots with the white balance shifted by 10 MK^{-1}*, and when [Hi] is selected, the camera shoots with the white balance shifted by 20 MK^{-1}.

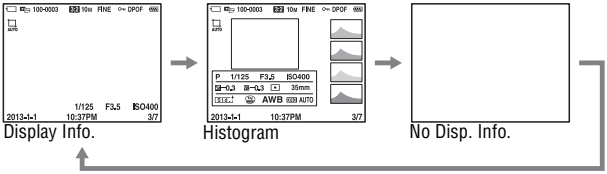
2 Adjust the focus and shoot the subject.

* MK^{-1}: a unit to indicate the color conversion quality in color temperature filters. (The same value as the conventional unit “Mired.”)

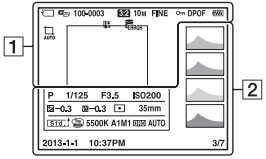
Playback mode screen display

Switching the screen during playback

Each time you press DISP on the control button, the screen changes as follows.



List of histogram display icons



1

Display	Indication
	Memory card (21, 205)
	View mode (149)
100-0003	Folder - file number (179)
3:2 16:9	Aspect ratio of still images (157)
20M 10M 5.0M 17M 8.4M 4.2M WIDE STD	Image size of still images (47)

Display	Indication
RAW RAW+J FINE STD	Image quality of still images (157)
	Protect (152)
DPOF	DPOF set (184)
	Remaining battery warning (23)
AUTO	Auto Object Framing (119)
	Remaining battery (23)

Display	Indication
FULL ERROR	Database file full (199)/ Database file error (199)
	Overheating warning (10)

2

Display	Indication
	Histogram* (79)
iA iA+ P A S M	Exposure mode (36)
1/125	Shutter speed (94)
F3.5	Aperture (92)
ISO200	ISO sensitivity (129)
–0.3	Exposure compensation (43)
–0.3	Flash compensation (124)
	Metering mode (123)
35mm	Focal length
Std. Vivid Port. Land. Sunset B/W	Creative Style (134)
Toy Pop Pos. Pos. Retro Soft HDR Part. Part. Part. Part. HiCon. Soft Mono. Rich Mini	Picture Effect (133)
AWB –1 0 +1 +2 5500K A1 M1	White balance (Auto, Preset, Color temperature, Color filter, Custom) (136)
D-R OFF DRO HDR HDR !	D-Range Optimizer (130)/Auto HDR/Auto HDR image warning (131)

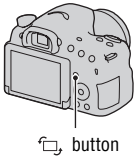
Display	Indication
2013-1-1 10:37AM	Date of recording
3/7	File number/Number of images in the view mode

* When the image has a high-key or low-key portion, that portion flashes on the histogram display (Luminance limit warning).

Using the playback functions

Rotating an image

1 Display the image you want to rotate, then press the ↻ button.



2 Press the center of the control button.

The image is rotated counter-clockwise. When you want to do another rotation, repeat step 2.

- Once you rotate the image, the image is played back in the rotated position, even after you turn off the power.

To return to the normal playback screen

Press the ↻ button again.

Notes

- You cannot rotate movies or 3D-images.
- When you copy rotated images to a computer, "PlayMemories Home" can display the rotated images correctly. However, the images may not be rotated depending on the software.

Still/Movie Select

Selects the unit for images to be played back.

MENU button → ▶ 1 → [Still/Movie Select] → Select the desired setting

Folder View(Still)	Displays still images by folder.
Folder View(MP4)	Displays movies (MP4) by folder.
AVCHD View	Displays AVCHD movies.

Slide Show

MENU button → ▶ 1 → [Slide Show]→ [Enter]

Plays back recorded images in order (Slide Show). The slide show automatically stops after all the images have been played back.

- You can view the previous/next image using ◀/▶ on the control button.
- You cannot pause the slide show.

To end in the middle of the slide show

Press the center of the control button.

To change the interval between the images in a slide show

MENU button → ▶ 1 → [Slide Show] → [Interval] → Select the desired number of seconds

To play back repeatedly

MENU button → ▶ 1 → [Slide Show] → [Repeat] → [On]

To play back 3D images

If you connect the camera to a 3D-compatible TV using an HDMI cable (sold separately), you can play back 3D images.
Also refer to the operating instructions supplied with the TV.

MENU button → ▶ 1 → [Slide Show] → [Image Type] → [Display 3D Only]

Notes

- This camera cannot record 3D images.

Playback Display

You can set the playback orientation of images recorded in portrait orientation.

MENU button → ▶ 2 → [Playback Display] → Select the desired setting

Scrolling panoramic images

Select a panoramic image, then press the center of the control button.

- Press the center of the control button again to pause the playback. You can scroll a panoramic image manually by pressing ▲/▼/◀/► during pause.

Protecting images (Protect)

You can protect images against accidental erasure.

1 MENU button → ▶ 1 → [Protect] → [Multiple Img.]

2 Select the image you want to protect using ◀/▶ on the control button, then press the center of the control button.

A ✓ mark is put in the check box.

- To cancel a selection, press the center again.

3 To protect other images, repeat step 2.

- You can select all the images in the folder by selecting the bar on the left of the image index screen.

4 Press the MENU button.

5 Select [OK] using ▲, then press the center of the control button.

To cancel protection of all the images or movies

You can cancel protection of all the images or movies in each view mode displayed.

MENU button → ▶ 1 → [Protect] → [Cancel All Images], [Cancel All Movies(MP4)] or [Cancel All AVCHD view files]

Deleting images (Delete)

You can delete selected images or all the images.
Once you have deleted an image, you cannot restore it. Be sure that you do not want the image before deleting it.

Notes
• Protected images cannot be deleted.

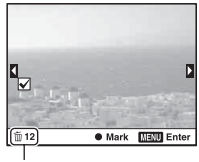
To display the desired folder
Select the bar on the left of the screen using the control button, then select the desired folder using ▲/▼.

Delete (Multiple Img.)

1 MENU button → ▶ 1 → [Delete] → [Multiple Img.]

2 Select the image you want to delete using the control button, then press the center of the control button.

A ✓ mark is put in the check box.
• To cancel a selection, press the center again.



Total number

3 To delete other images, repeat step 2.

• You can select all the images in the folder by selecting the bar on the left of the image index screen.

4 Press the MENU button.

5 Select [OK] using ▲, then press the center of the control button.

Deleting all images or movies in each view mode

You can delete all still images or movies in each view mode displayed.

1 MENU button → ▶ 1 → [Delete] → [All in Folder] or [All AVCHD view files]

2 Select [Delete] using ▲ on the control button, then press the center of the control button.

TV playback

Connect the camera to a TV using an HDMI cable (sold separately) and play back images (page 50).

Notes

- Use an HDMI cable that has the HDMI logo.
- Use an HDMI cable with a mini connector on one end (for the camera), and a connector suitable for connection to your TV on the other end.
- When images cannot be displayed properly, set [HDMI Resolution] in the Setup menu to [1080p] or [1080i], depending on your TV.
- Some devices may not work properly.
- Do not connect the camera and your TV using both output terminals. This may cause a malfunction.

"PhotoTV HD"

This camera is compatible with the "PhotoTV HD" standard.
By connecting Sony's PhotoTV HD-compatible devices using an HDMI cable, a whole new world of photos can be enjoyed in breathtaking Full HD quality.
"PhotoTV HD" allows for a highly-detailed, photo-like expression of subtle textures and colors.

Using "BRAVIA" Sync

By connecting the camera to a TV that supports "BRAVIA" Sync using an HDMI cable (sold separately), you can operate the camera using the TV remote control.

1 Connect a TV that supports "BRAVIA" Sync to the camera (page 50).

The input is automatically switched and the image shot with the camera appears on the TV screen.

2 Press the SYNC MENU button on the TV remote control.

3 Operate using the buttons on the TV remote control.

Sync Menu items

Slide Show	Plays back images automatically (page 150).
Single-image playback	Returns to the single-image screen.
Image Index	Switches to the image index screen.
Still/Movie Select	Switches the view mode.
Delete	Deletes images.

Notes

- The operations available are restricted when the camera is connected to a TV using an HDMI cable (sold separately).
- Only TVs that support “BRAVIA” Sync can provide these operations. SYNC MENU operations differ depending on the TV connected. For details, refer to the operating instructions supplied with the TV.
- If the camera performs unwanted operations in response to the TV remote control when the camera is connected to another manufacturer’s TV using an HDMI connection, set [CTRL FOR HDMI] in the Setup menu to [Off].

Setting the aspect ratio and image quality

Aspect Ratio

MENU button → 1 → [Aspect Ratio] → Select the desired ratio

3:2	Normal ratio.
16:9	HDTV ratio.

Notes

• [Aspect Ratio] cannot be set when the exposure mode is set to [Sweep Panorama].

Quality

MENU button → 1 → [Quality] → Select the desired setting

RAW (RAW)	File format: RAW (Records using the RAW compression format.) This format does not perform any digital processing on the images. Select this format to process images on a computer for professional purposes. • The image size is fixed to the maximum size. The image size is not displayed on the screen.
RAW+J (RAW & JPEG)	File format: RAW (Records using the RAW compression format.) + JPEG A RAW image and a JPEG image are created at the same time. This is suitable when you need 2 image files, a JPEG for viewing, and a RAW for editing. • The image quality is fixed to [Fine] and the image size is fixed to [L].
FINE (Fine)	File format: JPEG The image is compressed in the JPEG format when recorded. Since the compression rate of **STD** (Standard) is higher than that of **FINE** (Fine), the file size of **STD** is smaller than that of **FINE**. This will allow more files to be recorded on one memory card, but the image quality will be lower.
STD (Standard)	

Notes

• [Quality] cannot be set when the exposure mode is set to [Sweep Panorama].

About RAW images

Download and install “Image Data Converter” on your computer to open a RAW image recorded on this camera. With this software, a RAW image can be opened and converted to a common format, such as JPEG or TIFF, and its white balance, color saturation, contrast, etc., can be readjusted.

- The RAW format image cannot be printed using a DPOF (print) designated printer.
- You cannot set [Auto HDR] or [Picture Effect] for RAW format images.

Setting the other camera functions

Long Exposure NR

When you set the shutter speed to 1 second or longer (Long exposure shooting), noise reduction is turned on for the same duration that the shutter is open. This reduces the grainy noise typical for a long exposure. When noise reduction is in progress, a message appears and you cannot take another picture. Select [On] to prioritize the image quality. Select [Off] to prioritize the timing of shooting.

MENU button → 2 → [Long Exposure NR] → Select the desired setting

Notes

- Noise reduction is not performed even when [Long Exposure NR] is set to [On] in the following situations.
  - When the exposure mode is set to [Sweep Panorama], [Tele-zoom Cont. Priority AE], or [Sports Action] or [Hand-held Twilight] in [Scene Selection]
  - When [Drive Mode] is set to [Cont. Shooting] or [Bracket: Cont.]
  - When [ISO] is set to [Multi Frame Noise Reduct.]
- When the exposure mode is set to [Intelligent Auto], [Superior Auto] or [Scene Selection], you cannot turn off noise reduction.

High ISO NR

The camera reduces the noise that becomes more noticeable when the camera sensitivity is high. A message may be displayed during processing and you cannot record images during this time.
Normally, set it to [Normal]. Select [High] to reduce the noise. Select [Low] to prioritize the timing of shooting.

MENU button → 2 → [High ISO NR] → Select the desired setting

Notes

- When the exposure mode is set to [Intelligent Auto], [Superior Auto], [Sweep Panorama], or [Scene Selection], this item cannot be set.
- Noise reduction is not performed on RAW images.

Color Space

The way colors are represented with combinations of numbers or the range of color reproduction is called “color space.” You can change the color space, depending on your purpose.

MENU button → 3 → [Color Space] → Select the desired setting

sRGB	This is the standard color space of the digital camera. Use sRGB in normal shooting, such as when you intend to print out the images without any modifications.
AdobeRGB	This has a wide range of color reproduction. When a large part of the subject is vivid green or red, Adobe RGB is effective. • The file name of the image starts with “_DSC.”

Notes

- Adobe RGB is for applications or printers that support color management and DCF2.0 option color space. Using applications or printers that do not support them may result in images or prints that do not faithfully reproduce the color.
- When displaying images that were recorded with Adobe RGB on the camera or non-Adobe RGB-compliant devices, the images are displayed with low saturation.

Release w/o Lens

You can release the shutter when no lens is attached. Select this when you attach the camera to an astronomical telescope, etc.

MENU button → 1 → [Release w/o Lens] → [Enable]

Notes

- Correct metering cannot be achieved when you use lenses that do not provide a lens contact, such as the lens of an astronomical telescope. In such cases, adjust the exposure manually by checking it on the recorded image.

Grid Line

The grid line is an auxiliary line for shooting composition. You can set the grid line to on/off or select the type of grid line. The available range of movie recording is also displayed.

MENU button → ☼ 2 → [Grid Line] → Select the desired setting

Auto Review

You can check the recorded image on the screen immediately after shooting. You can change the displayed time.

MENU button → ☼ 2 → [Auto Review] → Select the desired setting

Notes

- In auto review, the image will not be displayed in the vertical position even if [Playback Display] is set to [Auto Rotate] (page 150).
- In auto review, the camera may display an image for which an image process, such as [Lens Comp.: Distortion], has not been performed, then display the same image for which an image process has been performed.

Func. of AEL button

The function of the AEL button can be selected from the following 2 functions (page 123):

– Holding the locked exposure value by pressing down and holding the AEL button ([AEL hold]).
– Holding the locked exposure value by pressing the AEL button until the button is pressed again ([AEL toggle]).

When [⊡ AEL hold] or [⊡ AEL toggle] is selected, the exposure is locked in spot metering mode.

MENU button → ☼ 3 → [Func. of AEL button] → Select the desired setting

Notes

- While the exposure value is locked, ✱ appears on the LCD screen and in the viewfinder. Be careful not to reset the setting.
- When [AEL toggle] is selected, be sure to press the AEL button again to release the lock.

To assign another function to the AEL button

You can assign one of the following functions to the AEL button in addition to the AEL function:
Exposure Comp./Drive Mode/Flash Mode/Autofocus Mode/AF area/Smile/Face Detect./Auto Object Framing/ISO/Metering Mode/Flash Comp./White Balance/DRO/Auto HDR/Creative Style/Picture Effect/Image Size/Quality/Lock-on AF/AF lock/Aperture Preview/Shot. Result Preview/Zoom/Focus Magnifier

ISO Button

You can also assign another function to the ISO button, other than the ISO function. The functions available are the same as those of [Func. of AEL button] (page 161).

MENU button → ☼ 3 → [ISO Button] → Select the desired setting

Preview Button

You can check the approximate blurring of the background of the subject before shooting (page 94). You can also assign [Focus Magnifier] to the preview button, which allows you to magnify the image to confirm the focus before shooting (page 116).

MENU button → ☼ 3 → [Preview Button] → Select the desired setting

Shot. Result Preview	The aperture is narrowed to match the selected aperture value and you can check the blurring. The effect of DRO or the shutter speed value is also reflected. • The preview image may be darker, depending on the shutter speed value. However, you can record images based on the brightness you have set.
Aperture Preview	The aperture is narrowed to match the selected aperture value and you can check the blurring.
Focus Magnifier	You can magnify the image to confirm the focus before shooting.

Electronic Front Curtain Shutter

The electronic front curtain shutter function shortens the time lag between shutter releases.

MENU button → ☼ 4 → [e-Front Curtain Shutter] → Select the desired setting

Notes

- When you shoot at high shutter speeds, ghosting of a blurred area may occur and the image brightness may be uneven, depending on the subject or shooting conditions. In such cases, set [e-Front Curtain Shutter] to [Off].
- When a Minolta/Konica Minolta lens is used, set [e-Front Curtain Shutter] to [Off].

Viewfinder Bright.

The brightness of the viewfinder is automatically adjusted to the lighting conditions of the subject.
You can set the brightness of the viewfinder manually.

MENU button → 🔧 1 → [Viewfinder Bright.] → [Manual] → Select the desired setting

Power Save

You can shorten the waiting time until the camera turns on power save mode when it is not being operated to prevent the battery from being consumed. If you operate the camera, for example, pressing the shutter button halfway down, the camera returns to shooting mode. If you do not operate the camera for a set period of time, the brightness of the LCD screen is reduced.

MENU button → 1 → [Power Save] → Select the desired setting

To change the waiting time until the camera turns on the power save mode

You can set different time intervals in which the camera switches to power save mode.

MENU button → 1 → [Power Saving Start Time] → Select the desired time

Notes

- When the AC-PW10AM AC Adaptor (sold separately) is used, [Power Save] cannot be set to [Max].
- The camera does not turn to power save mode when the camera is connected to a TV.
- If you set [Power Save] to [Max], [Power Saving Start Time] is set to [10 Sec].

FINDER/LCD Setting

You can disable automatic switching of the LCD screen and the viewfinder and enable only the FINDER/LCD button to switch them.

MENU button → 1 → [FINDER/LCD Setting] → [Manual]

Lens compensation

You can automatically compensate for the following characteristics: light fall-off at the edges, chromatic aberration, and distortion (only for automatic compensation compliant lenses). For further information on automatic compensation compliant lenses, visit the Sony web site, or consult your Sony dealer or local authorized Sony service facility.

Lens Comp.: Peripheral Shading

Compensates for the shaded corners of the screen caused by certain lens characteristics. The default setting is [Auto].

MENU button → ☼ 4 → [Lens Comp.: Shading] → Select the desired setting

Lens Comp.: Chromatic Aberration

Reduces the color deviation at the corners of the screen caused by certain lens characteristics. The default setting is [Auto].

MENU button → ☼ 4 → [Lens Comp.: Chro. Aber.] → Select the desired setting

Lens Comp.: Distortion

Compensates for the distortion of the screen caused by certain lens characteristics. The default setting is [Off].

MENU button → ☼ 4 → [Lens Comp.: Distortion] → Select the desired setting

Setting the memory card recording method

Format

Note that formatting irrevocably erases all data on a memory card, including protected images.

MENU button → 1 → [Format] → [Enter]

Notes

- During formatting, the access lamp lights up. Do not eject the memory card while the lamp is lit.
- Format the memory card using the camera. If you format it on a computer, the memory card may not be usable with the camera, depending on the format type used.
- Formatting may take several minutes depending on the memory card.
- If the remaining battery time is 1 percent or less, you cannot format memory cards.

File Number

MENU button → 1 → [File Number] → Select the desired setting

Series	The camera does not reset numbers and assigns numbers to files in sequence until the number reaches “9999.”
Reset	The camera resets numbers when a file is recorded in a new folder and assigns numbers to files from “0001.” When the recording folder contains a file, a number one higher than the largest number is assigned.

Folder Name

The recorded still images are stored in automatically-created folders in the DCIM folder of the memory card.

MENU button → 1 → [Folder Name] → Select the desired setting

Standard Form	The folder name format is as follows: folder number + MSDCF. Example: 100MSDCF
Date Form	The folder name format is as follows: folder number + Y (the last digit)/MM/DD. Example: 10030405 (Folder name: 100, date: 2013/04/05)

Notes

• The MP4 movie folder form is fixed as “folder number + ANV01.”

Select REC Folder

When a standard form folder is selected and there are 2 or more folders, you can select the recording folder to which images are recorded.

MENU button → 1 → [Select REC Folder] → Select the desired folder

Notes

• You cannot select the folder when you select the [Date Form] setting.

New Folder

You can create a folder on a memory card for recording images.
A new folder is created with a folder number one higher than the largest number currently in use, and the new folder becomes the current recording folder. A folder for still images and a folder for MP4 movies are created at the same time.

MENU button → 1 → [New Folder]

Notes

• When you insert a memory card that was used with other equipment into the camera and shoot images, a new folder may be automatically created.
• Up to 4,000 images can be stored in a folder. When the maximum image number is exceeded, a new folder is automatically created.

Recover Image DB

When inconsistencies are caused in the image database file by processing files on computers, etc., images on the memory card will not be played back on this camera. If this happens, the camera repairs the file.

MENU button → 1 → [Recover Image DB] → [Enter]

Notes

- Use a sufficiently charged battery. Low battery power during repairs can damage data.

Upload Settings

Select [On] to use the upload function of an Eye-Fi card (commercially available).
This item appears when an Eye-Fi card is inserted in the camera.

MENU button → 2 → [Upload Settings] → [On]

Communication status

	Standby. No images are to be sent.
	Upload standby.
	Connecting.
	Uploading.
	Error.

Notes

- The Power Save function does not work while the camera is uploading images.
- Before using an Eye-Fi card, set up a wireless LAN access point and forwarding destination. For details, refer to the operating manual supplied with the Eye-Fi card.
- Eye-Fi cards are sold in the U.S.A., Canada, Japan, and some countries in the EU (as of March 2013).
- For more information, please contact the manufacturer or vendor directly.
- Eye-Fi cards can be used only in the countries/regions where they were purchased. Use Eye-Fi cards in accordance with the laws of the countries/regions in which you purchased the card.

- Eye-Fi cards include a wireless LAN function. Do not insert any Eye-Fi cards in the camera when it is prohibited to do so, such as on an airplane. If there is an Eye-Fi card inserted in the camera, set [Upload Settings] to [Off]. OFF is displayed on the screen when [Upload Settings] is set to [Off].
- When you use a new Eye-Fi card for the first time, copy the install file of the Eye-Fi manager recorded on the card to your computer before formatting the card.
- Use an Eye-Fi card after updating the firmware to the latest version. For details, refer to the manual that comes with the Eye-Fi card.
- If (error) is displayed, remove the memory card and reinsert it, or turn off then turn on the power again. If appears again, the Eye-Fi card may be damaged.
- Wi-Fi network communication may be influenced by other communication devices. If the communication status is poor, move closer to the access point of the Wi-Fi network.
- For details on the file types that can be uploaded, refer to the operating instructions supplied with the Eye-Fi card.
- This product does not support the Eye-Fi “Endless Memory Mode.” Make sure that Eye-Fi cards that you insert into this product have “Endless Memory Mode” turned off.

Resetting to default settings

You can reset the main functions of the camera.

MENU button → 3 → [Initialize] → Select the desired setting → [OK]

The following items will be reset.

Shooting functions (Reset Default/Rec mode reset)

Items	Reset to
Exposure Comp. (43)	±0.0
Drive Mode (45, 143)	Single Shooting
Flash Mode (41, 126)	Fill-flash (differs based on whether the built-in flash is open)
Autofocus Mode (109)	AF-A
AF area (110)	Wide
Lock-on AF (111)	On
Smile/Face Detect. (117, 120)	Face Detection On (Regist. Faces)
Auto Object Framing (119)	Auto
ISO (129)	AUTO
Metering Mode (123)	Multi segment
Flash Comp. (124)	±0.0
White Balance (136)	AWB (Auto WB)
Color Temp./Color Filter (138)	5500K, Color Filter 0
Custom white balance (138)	5500K
DRO/Auto HDR (130)	D-Range Optimizer: Auto
Creative Style (134)	Standard
Picture Effect (133)	Off
Scene Selection (38, 86)	Portrait
Movie (102)	P

Still shooting menu (Reset Default/Rec mode reset)

Items	Reset to
Image Size (47)	L: 20M
Aspect Ratio (157)	3:2

Items	Reset to
Quality (157)	Fine
Panorama: Size (47)	Standard
Panorama: Direction (89)	Right
Clear Image Zoom (140)	On
Digital Zoom (101, 140)	Off
Long Exposure NR (159)	On
High ISO NR (159)	Normal
Flash control (124)	ADI flash
AF Illuminator (111)	Auto
SteadyShot (83)	On
Color Space (160)	sRGB
AEL w/ shutter (123)	On

Movie shooting menu (Reset Default/Rec mode reset)

Items	Reset to
File Format (103)	AVCHD
Record Setting (104)	60i 17M(FH), 50i 17M(FH)
SteadyShot (83)	On
AF Track. Duration (56)	Mid
Audio Recording (105)	On
Wind Noise Reduct. (105)	Off

Custom menu (Reset Default/Custom reset)

Items	Reset to
Eye-Start AF (77)	Off
FINDER/LCD Setting (164)	Auto
Red Eye Reduction (57)	Off
Release w/o Lens (160)	Disable
S. Auto Cont. Shooting (85)	Auto
S. Auto Image Extract. (85)	Auto
Grid Line (161)	Off
Auto Review (161)	2 Sec

Items	Reset to
DISP Button(Monitor) (78)	Display All Info./Graphic Display/No Disp. Info.
DISP Button(Finder) (78)	No Disp. Info./Graphic Display
Peaking Level (115)	Off
Peaking Color (115)	White
Live View Display (80)	Setting Effect ON
Func. of AEL button (161)	AEL hold
ISO Button (162)	ISO
Preview Button (162)	Shot. Result Preview
Focus Hold Button (58)	Focus Hold
MOVIE Button (58)	Always
Lens Comp.: Shading (165)	Auto
Lens Comp.: Chro. Aber. (165)	Auto
Lens Comp.: Distortion (165)	Off
e-Front Curtain Shutter (163)	On

Playback menu (Reset Default)

Items	Reset to
Still/Movie Select (149)	Folder View(Still)
Slide Show – Interval (150)	3 Sec
Slide Show – Repeat (150)	Off
Image Index (49)	4 Images
Specify Printing – Date Imprint (184)	Off
Volume Settings (59)	2
Playback Display (150)	Auto Rotate

Memory Card Tool menu (Reset Default)

Items	Reset to
File Number (166)	Series
Folder Name (166)	Standard Form

Setup menu (Reset Default)

Items	Reset to
Menu start (60)	Top
Mode Dial Guide (60)	On
LCD Brightness (60)	±0
Viewfinder Bright. (163)	Auto
Viewfinder Color Temp. (60)	0
Power Save (164)	Standard
Power Saving Start Time (164)	1 Min
HDMI Resolution (155)	Auto
CTRL FOR HDMI (155)	On
Upload Settings (168)	On
USB Connection (177)	Auto
USB LUN Setting (177)	Multi
Audio signals (61)	On
Demo Mode (61)	Off

Others (Reset Default)

Items	Reset to
Recording information display (LCD screen) (46)	Display All Info.
Recording information display (Viewfinder) (46)	No Disp. Info.
Playback display (147)	Single-image screen (with recording information)

Notes

- Faces registered using [Face Registration] are not deleted even if you use [Reset Default]. Select [Delete All] in [Face Registration] in the ☼ Custom menu.
- Perform [Reset Default] to reset [Date/Time Setup], [Area Setting], [File Number], and [🅰 Language] to the default settings.

Confirming the camera version

Displays the camera version. Confirm the version when a firmware update is released.
If you mount a lens compatible with the lens version up feature, the lens version is also displayed.

MENU button → 3 → [Version]

Notes

- An update can be performed only when the battery level is (3 remaining battery icons) or more. We recommend that you use a battery with sufficient charge or the AC-PW10AM AC Adaptor (sold separately).

Using the camera with your computer

Use the following applications to allow more versatile uses of images shot using your camera.

- "PlayMemories Home"
  You can import still images or movies recorded using the camera to your computer so that you can view them, and use various convenient features to enhance the images you have shot.
- "Image Data Converter"
  You can open RAW format image files.

For detailed notes on installation, see page 66.

Notes

- An Internet connection is required to install the software.
- Use "Image Data Converter" to play back RAW images.
- "PlayMemories Home" is not compatible with Mac computers. When you play back images on Mac computers, use the appropriate application software supplied with the Mac computer.

Recommended computer environment (Windows)

The following computer environment is recommended when using the software and importing images via a USB connection.

OS (pre-installed)	Microsoft Windows XP* SP3/Windows Vista** SP2/ Windows 7 SP1/Windows 8
"PlayMemories Home"	**CPU:** Intel Pentium III 800 MHz or faster (For playing/editing High Definition movies: Intel Core Duo 1.66 GHz or faster/Intel Core 2 Duo 1.66 GHz or faster, Intel Core 2 Duo 2.26 GHz or faster (AVC HD (FX/FH))) **Memory:** Windows XP 512MB or more (1 GB or more is recommended), Windows Vista/Windows 7 1 GB or more **Hard Disk:** Disk space required for installation-approximately 500 MB **Display:** Screen resolution-1024 × 768 dots or more
"Image Data Converter Ver.4"	**CPU/Memory:** Pentium 4 or faster/1 GB or more **Display:** 1024 × 768 dots or more

* 64-bit editions and Starter (Edition) are not supported. Windows Image Mastering API (IMAPI) Ver.2.0 or later is required to use the function for creating discs.

** Starter (Edition) is not supported.

Recommended computer environment (Mac)

The following computer environment is recommended when using the software and importing images via a USB connection.

OS (pre-installed)	**USB Connection:** Mac OS X v10.3 – 10.8 **"Image Data Converter Ver.4":** Mac OS X v10.5, 10.6 (Snow Leopard), 10.7 (Lion), 10.8 (Mountain Lion)
"Image Data Converter Ver.4"	**CPU:** Intel Core Solo/Core Duo/Core 2 Duo or faster **Memory:** 1 GB or more is recommended. **Display:** 1024 × 768 dots or more

Notes

- Operation is not assured in an environment based on an upgrade of the operating systems described above or in a multi-boot environment.
- If you connect 2 or more USB devices to a single computer at the same time, some devices, including the camera, may not operate, depending on the types of USB devices you are using.
- Connecting the camera using a USB interface that is compatible with Hi-Speed USB (USB 2.0 compliant) allows advanced transfer (high speed transfer), as the camera is compatible with Hi-Speed USB (USB 2.0 compliant).
- When your computer resumes activity from suspend or sleep mode, communication between the camera and your computer may not recover at the same time.

Connecting the camera to a computer

Making a USB connection

Selects the method used to make a USB connection between the camera and a computer or a USB device using a USB cable.

MENU button → 2 → [USB Connection] → Select the desired setting

Auto	Establishes a Mass Storage or MTP connection automatically, based on the computer or other USB devices to be connected. Windows 7 or Windows 8 computers are connected in MTP, and its unique functions are enabled for use.
Mass Storage	Establishes a Mass Storage connection between the camera, a computer, and other USB devices.
MTP	Establishes an MTP connection between the camera, a computer, and other USB devices. Windows 7 or Windows 8 computers are connected in MTP, and its unique functions are enabled for use. In the case of other computers (Windows Vista/XP, Mac OS X), the AutoPlay Wizard appears, and the still images in the recording folder on the camera are imported to the computer.
PC Remote	Uses "Remote Camera Control" to control the camera from the computer, including such functions as shooting and storing images on the computer (page 68).

Notes

- When [USB Connection] is set to [Auto], it may take some time to establish a connection.
- If Device Stage* is not displayed with Windows 7 or Windows 8, set [USB Connection] to [Auto].

* Device Stage is a menu screen used to manage connected devices, such as a camera (Function of Windows 7 or Windows 8).

Setting the USB connection mode (USB LUN Setting)

Enhances compatibility by limiting of USB connection functions.

MENU button → 2 → [USB LUN Setting] → Select the desired setting

Multi	Normally, use [Multi].
Single	Set [USB LUN Setting] to [Single] only if you cannot make a connection.

Connecting to a computer

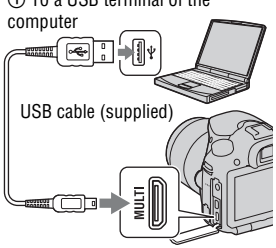
1 Insert a sufficiently charged battery pack into the camera, or connect the camera to a wall outlet (wall socket) using the AC-PW10AM AC Adaptor (sold separately).

2 Turn on the camera and the computer.

3 Check that [USB Connection] in 2 is set to [Mass Storage].

4 Connect the camera to your computer.

- When a USB connection is established for the first time, your computer automatically runs a program to recognize the camera. Wait for a while.



Importing images to a computer (Windows)

"PlayMemories Home" allows you to easily import images.
For details on "PlayMemories Home" functions, see the "PlayMemories Home Help Guide."

Importing images to the computer without using "PlayMemories Home"

When the AutoPlay Wizard appears after making a USB connection between the camera and a computer, click [Open folder to view files] → [OK] → [DCIM] or [MP_ROOT] → copy the desired images to the computer.

File name

Folder	Type of file	File name
DCIM folder	JPEG file	DSC0□□□□.JPG
	JPEG file (AdobeRGB)	_DSC□□□□.JPG
	RAW file	DSC0□□□□.ARW
	RAW file (AdobeRGB)	_DSC□□□□.ARW
MP_ROOT folder	MP4 file (1440×1080 12M)	MAH0□□□□.MP4
	MP4 file (VGA 3M)	MAQ0□□□□.MP4

- □□□□ (file number) stands for any number within the range of 0001 to 9999.
- When [Quality] is set to [RAW & JPEG], the numerical portions of the name of a RAW data file and its corresponding JPEG file are the same.

Notes

- For operations such as importing AVCHD movies to the computer, use "PlayMemories Home."
- When the camera is connected to the computer, if you operate AVCHD movies or folders from the connected computer, images may be damaged or may not be able to be played. Do not delete or copy AVCHD movies on the memory card from the computer. Sony is not liable for consequences resulting from such operations via the computer.

Importing images to a computer (Mac)

1 Connect the camera to your Mac computer first. Double-click the new icon on the desktop → the folder where the images you want to import are stored.

2 Drag and drop the image files to the hard disk icon.

The image files are copied to the hard disk.

3 Double-click the hard disk icon → the desired image file in the folder containing the copied files.

The image is displayed.

Software for Mac computers

For details on other software for Mac computers, access the following URL:
http://www.sony.co.jp/imsoft/Mac/

Deleting the USB connection

Perform steps 1 and 2 below before performing the following operations:
- Disconnecting the USB cable.
- Removing the memory card.
- Turning off the camera.

1 Double-click the disconnect icon in the tasktray.

- For Windows 7 or Windows 8, click , then click .

2 Click (Safely remove USB Mass Storage Device).

Notes
- With Mac computers, drag and drop the icon of the memory card or the drive icon to the “Trash” icon before you disconnect the camera from the computer.
- With Windows 7, the disconnect icon may not be displayed. In that case, you can disconnect without following the above procedure.
- Do not disconnect the USB cable when the access lamp is lit. The data may be damaged.

Creating a movie disc

Creating a high definition quality (HD) disc (AVCHD recording disc) on a computer

You can create a high definition quality (HD) AVCHD recording disc from AVCHD movies imported to a computer using the software "PlayMemories Home."

1 Start up [PlayMemories Home] and select Tools in the upper right of the screen → (Create Discs) → (AVCHD (HD)).

2 Select the AVCHD movies you want to write, then drag and drop onto the right side of the screen.

3 Create the disc, following the instructions on the screen.

Notes

- Install "PlayMemories Home" beforehand.
- Still images and MP4 movie files cannot be recorded on the AVCHD recording disc.
- It may take a long time to create a disc.

Playing back an AVCHD recording disc on a computer

You can play back the discs using "PlayMemories Home." Select the DVD drive that holds the disc and click [Player for AVCHD] on "PlayMemories Home."

See "PlayMemories Home Help Guide" for details.

Notes

- Movies may not be played smoothly depending on the computer environment.

Creating a Blu-ray disc

You can create a Blu-ray disc using AVCHD movies previously imported to a computer. Your computer must support the creation of Blu-ray discs. BD-R (non-rewritable) and BD-RE (rewritable) media can be used to create Blu-ray discs. You cannot add content to either type of disc once it has been created.

To create Blu-ray discs using "PlayMemories Home," install proprietary add-on software. For details, access the following URL:

http://support.d-imaging.sony.co.jp/BDUW/

An Internet connection environment is required to install the software. See "PlayMemories Home Help Guide" for details.

Creating a standard definition quality (STD) disc

1 Start up [PlayMemories Home] and select Tools in the upper right of the screen → (Create Discs) → (DVD-Video (STD)).

2 Select the AVCHD movies you want to write, then drag and drop onto the right side of the screen.

3 Create the disc, following the instructions on the screen.

Notes

- Install "PlayMemories Home" beforehand.
- MP4 movie files cannot be recorded on a disc.
- It will take a longer time to create a disc because AVCHD movies are converted to standard definition quality (STD) movies.
- An Internet connection environment is required when creating a DVD-Video (STD) disc for the first time.

Discs you can use with "PlayMemories Home"

You can use the following types of 12 cm discs using "PlayMemories Home." For Blu-ray discs, see page 182.

Disc type	Features
DVD-R/DVD+R/DVD+R DL	Unrewritable
DVD-RW/DVD+RW	Rewritable

- Always update your PlayStation®3 to the latest version of the PlayStation®3 system software.
- The PlayStation®3 may not be available in some countries/regions.

Specifying DPOF

Using the camera, you can specify still images before printing them at a shop or with your printer. Follow the procedure below.
DPOF specifications are left with images after printing. It is recommended that you unspecify them after printing.

1 MENU button → ▶ 1 → [Specify Printing] → [DPOF Setup] → [Multiple Img.] → [Enter]

2 Select the image using ◀/▶ on the control button.

3 Press the center of the control button to add a ✓ mark.

- To unspecify DPOF, select the image again, then press the center of the control button.

4 Press the MENU button.

5 Select [OK] using ▲, then press the center of the control button.

Notes
- You cannot specify DPOF on RAW data files.
- You cannot specify the number of images to be printed.

Date Imprint

You can add the date to images when printing them. The position of the date (inside or outside the image, character size, etc.) depends on your printer.

MENU button → ▶ 1 → [Specify Printing] → [Date Imprint] → [On]

Notes
- This function may not be available, depending on the printer.

Cleaning the camera and lens

Cleaning the camera

- Do not touch parts inside the camera, such as the lens contacts or the mirror. Since dust on the mirror or around the mirror may affect the images or the performance of the camera, blow the dust away using a commercially available blower*. For details on cleaning the image sensor, see the next page.
  * Do not use a spray-type blower as doing so may cause a malfunction.
- Clean the camera surface with a soft cloth slightly moistened with water, then wipe the surface with a dry cloth. To avoid damaging the finish or casing, follow the instructions below.
  – Do not use the chemical products such as thinner, benzine, alcohol, disposable cloths, insect repellent, sunscreen or insecticide, etc.
  – Do not touch the camera with the above substances on your hand.
  – Do not leave the camera in contact with rubber or vinyl for extended periods of time.

Cleaning the lens

- Do not use a cleaning solution containing organic solvents, such as thinner or benzine.
- When cleaning the lens surface, remove dust using a commercially available blower. In case of dust that sticks to the surface, wipe it off using a soft cloth or tissue paper slightly moistened with lens cleaning solution. Wipe in a spiral pattern from the center to the outside. Do not spray lens cleaning solution directly onto the lens surface.

Cleaning the image sensor

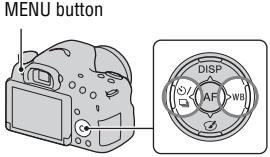
If dust or debris enters the camera and adheres to the image sensor (the part that acts as the film), it may appear as dark spots on the photo image, depending on the shooting environment. If there is dust on the image sensor, clean it following the steps below.

Notes

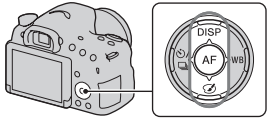
- Do not use a spray-type blower as doing so may scatter water droplets inside the camera body.

Cleaning the image sensor automatically using the camera's cleaning mode

1 Press the MENU button, then select 3 using ◄/► on the control button.



2 Select [Cleaning Mode] using ▲/▼, then press the center of the control button.



3 Select [Enter] using ▲, and press the center of the control button.

The image sensor vibrates for a short time, and eliminates dust from the sensor.

4 Turn off the camera.

Cleaning the image sensor using a blower

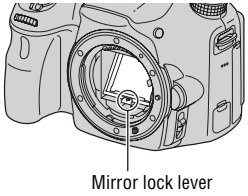
If further cleaning is needed after using cleaning mode, clean the image sensor using a blower, following the steps below.

1 Perform the cleaning operation described in steps 1 to 4 of "Cleaning the image sensor automatically using the camera's cleaning mode."

2 Detach the lens (page 25).

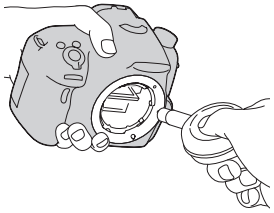
3 Push the ▼ mark on the mirror lock lever with a finger to lift up the mirror.

- Be careful not to touch the surface of the mirror.

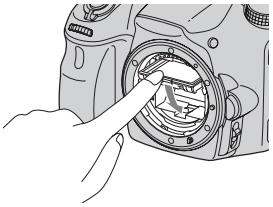


4 Use the blower to clean the image sensor surface and the surrounding area.

- Do not touch the image sensor with the tip of the blower and do not put the tip of the blower into the cavity beyond the mount.
- Hold the camera face downward to prevent the dust from resettling in the camera. Complete the cleaning quickly.
- Also clean the back of the mirror using the blower.



5 After cleaning is finished, lower the mirror with a finger until it clicks.



- Lower the mirror frame back down with a finger. Be careful not to touch the mirror surface.
- Lower the mirror down until it locks firmly.

6 Attach the lens and turn the camera off.

- Confirm that the mirror is locked down firmly when you attach the lens.

Notes

- After cleaning is finished, confirm that the mirror is locked down firmly when you attach the lens. Otherwise the lens may be scratched or additional problems may be caused. Also, if the mirror is not locked down firmly, the autofocus will not work while shooting.
- You cannot shoot while the mirror is lifted up.

Troubleshooting

If you experience trouble with the camera, try the following solutions.

❶ Check the following items.

❷ Remove the battery pack and reinsert it after about 1 minute, and turn on the power.

❸ Reset the settings (page 170).

❹ Consult your dealer or local authorized service facility.

Battery pack and power

The battery pack cannot be installed.

- As you insert the battery pack, use the tip of the battery pack to push the lock lever (page 21).
- Only an NP-FM500H battery pack can be used. Make sure that the battery is NP-FM500H.

The remaining battery level indicator shows incorrect level or power runs out quickly despite the indicator showing sufficient battery level. Cannot turn on the camera.

- This phenomenon occurs when you use the camera in an extremely hot or cold location (page 200).
- The battery pack is discharged. Install a charged battery pack (page 19).
- The battery pack is dead (page 208). Replace it with a new one.
- Install the battery pack correctly (page 21).

The power turns off suddenly.

- If you do not operate the camera for a certain period of time, the camera reverts to power-saving mode. To cancel power saving, operate the camera, such as pressing the shutter button halfway down (page 164).

The CHARGE lamp flashes when charging the battery pack.

- Only an NP-FM500H battery pack can be used. Make sure that the battery is NP-FM500H.
- If you charge a battery pack that has not been used for a long time, the CHARGE lamp may flash.
- The CHARGE lamp flashes in 2 ways, quickly (at about 0.15-second intervals) or slowly (at about 1.5-second intervals).
  If it is flashing quickly, remove the battery pack and reattach the same battery pack securely. If the CHARGE lamp flashes quickly again, it suggests that there is something wrong with the battery pack.
  Slow flashing indicates that charging is suspended because the ambient temperature is outside the suitable range for charging the battery pack. Charging will resume and the CHARGE lamp will be lit when the ambient temperature returns to within the suitable temperature.
  Charge the battery pack under suitable temperatures between 10°C and 30°C (50°F and 86°F).

Shooting images

Nothing is displayed on the LCD screen in viewfinder mode when the power is turned on.

- [FINDER/LCD Setting] is set to [Manual]. Press the FINDER/LCD button (page 164).

The image is not clear in the viewfinder.

- Adjust the diopter scale properly using the diopter-adjustment dial (page 29).

No images in the viewfinder.

- [FINDER/LCD Setting] is set to [Manual]. Press the FINDER/LCD button (page 164).
- Move your eye a little closer to the viewfinder.

The shutter does not release.

- You are using a memory card with a write-protect switch, and the switch is set to the LOCK position. Set the switch to the recording position.
- Check the free capacity of the memory card.
- You cannot record images while charging the built-in flash (pages 41, 126).
- In autofocus mode, the shutter cannot be released when the subject is out of focus.
- The lens is not attached properly. Attach the lens properly (page 24).
- When the camera is attached to another device, such as an astronomical telescope, set [Release w/o Lens] to [Enable] (page 160).
- The subject may require special focusing (page 107). Use the focus-lock or manual focus function (pages 108, 114).

Recording takes a long time.

- The noise reduction function is turned on (page 159). This is not a malfunction.
- You are shooting in RAW mode (page 157). Since RAW data files are large, RAW mode shooting may take time.
- The Auto HDR is processing an image (page 130).

The same image is shot several times.

- The drive mode is set to [Cont. Shooting] or [Bracket: Cont.]. Set [Drive Mode] to [Single Shooting] (pages 45, 143).
- The exposure mode is set to [Tele-zoom Cont. Priority AE] (pages 40, 90).
- The exposure mode is set to [Superior Auto] and [S. Auto Image Extract.] is set to [Off] (page 85).

The image is out of focus.

- The subject is too close. Check the minimum focal distance of the lens.
- You are shooting in manual focus mode. Set the focus mode switch to AF (autofocus) (page 106).
- When the lens has a focus mode switch, set it to AF.
- The ambient light is insufficient.

Eye-Start AF does not work.

- Set [Eye-Start AF] to [On] (page 77).
- Press the shutter button halfway down.

The flash does not work.

- The flash mode is set to [Autoflash]. If you want to make sure the flash fires each time, set the flash mode to [Fill-flash] (pages 41, 126).

The flash takes too long to recharge.

- The flash has been fired in quick succession over a short period. When the flash has been fired in succession, the recharging process may take longer than usual to avoid overheating of the camera.

A picture taken using the flash is too dark.

- If the subject is beyond the flash range (the distance that the flash can reach), the pictures will be dark because the flash light does not reach the subject. If the ISO is changed, the flash range also changes with it. Check the flash range in "Specifications."

The date and time are recorded incorrectly.

- Set the correct date and time (page 27).
- The area selected in [Area Setting] is different from the actual area. Set [Area Setting] again (page 27).

The aperture value and/or shutter speed flashes when you press the shutter button halfway down.

- Since the subject is too bright or too dark, it is beyond the available range of the camera. Adjust the setting again.

The image is whitish (Flare).
Blurring of light appears on the image (Ghosting).

- The picture was taken under a strong light source, and excessive light has entered the lens. Attach a lens hood.

The corners of the picture are too dark.

- If a filter or hood was used, take it off and try shooting again. Depending on the thickness of the filter and improper attachment of the hood, the filter or the hood may partially appear in the image. The optical properties of some lenses may cause the periphery of the image to appear too dark (insufficient light). You can compensate for this phenomenon with [Lens Comp.: Shading] (page 165).

The eyes of the subject are red.

- Activate the red eye reduction function (page 57).
- Get close to the subject, and shoot the subject within the flash range using the flash. Check the flash range in "Specifications."

Dots appear and remain on the LCD screen.

- This is not a malfunction. These dots are not recorded (page 10).

The image is blurred.

- The picture was taken in a dark location without the flash, resulting in camera shake. We recommend using a tripod or the flash (pages 41, 84, 126).

The EV scale ◄ ► is flashing.

- The subject is too bright or too dark for the metering range of the camera.

Viewing images

Your camera cannot play back images.

- The folder/file name has been changed on your computer (page 179).
- When an image file has been processed by a computer or when the image file was recorded using a model other than that of your camera, playback on your camera is not guaranteed.
- Use "PlayMemories Home" to play images stored on a PC with this camera.
- The camera is in USB mode. Delete the USB connection (page 180).

Deleting images

Your camera cannot delete an image.

- Cancel protection (page 152).

You have deleted an image by mistake.

- Once you have deleted an image, you cannot restore it. We recommend that you protect images that you do not want to delete (page 152).

Computers

You do not know if the OS of your computer is compatible with the camera.

- Check “Using the camera with your computer” (page 175).

Your computer does not recognize your camera.

- Check that the camera is turned on.
- When the battery level is low, install a charged battery pack (page 19) or use the AC Adaptor (sold separately).
- Use the USB cable (supplied) (page 178).
- Disconnect the USB cable, and connect it again firmly.
- Disconnect all equipment other than the camera, the keyboard and the mouse from the USB jacks of your computer.
- Connect the camera directly to your computer without passing through a USB hub or other device (page 178).

You cannot copy images.

- Make the USB connection by properly connecting the camera with your computer (page 178).
- Follow the designated copy procedure for your OS (page 178).
- When you shoot images using a memory card formatted by a computer, you may not be able to copy the images to a computer. Shoot using a memory card formatted by your camera (page 166).

The image cannot be played back on a computer.

- If you are using “PlayMemories Home,” refer to the “PlayMemories Home Help Guide.”
- Consult the computer or software manufacturer.

After making a USB connection, “PlayMemories Home” does not start automatically.

- Make the USB connection after the computer is turned on (page 178).

Memory card

Cannot insert a memory card.

- The insertion direction of the memory card is wrong. Insert it in the correct direction (page 21).

Cannot record on a memory card.

- The memory card is full. Delete unnecessary images (pages 34, 153).
- An incompatible memory card is inserted (pages 23, 205).

You have formatted a memory card by mistake.

- All the data on the memory card is deleted by formatting. You cannot restore it.

Printing

Cannot print images.

- RAW images cannot be printed. To print RAW images, first convert them to JPEG images using the software “Image Data Converter.”

The color of the image is strange.

- When you print images recorded in Adobe RGB mode using sRGB printers that are not compatible with Adobe RGB (DCF2.0/Exif2.21), the images are printed at a lower intensity level (page 160).

Images are printed with both edges cut off.

- Depending on your printer, the left, right, top, and bottom edges of the image may be cut off. In particular, when you print an image shot with the aspect ratio set to [16:9], the sides of the image may be cut off.
- When printing images using your printer, cancel the trimming or borderless settings of the printer. Consult the printer manufacturer as to whether the printer provides these functions or not.
- When having images printed at a digital print shop, ask the shop whether they can print the images without cutting off both edges.

Cannot print images with the date.

- Using “PlayMemories Home,” you can print images with the date (page 64).
- This camera does not have a feature for superimposing dates on images. However, because the images shot with the camera include information on the recording date, you can print images with the date superimposed if the printer or the software can recognize Exif information. For compatibility with Exif information, consult the manufacturer of the printer or the software.
- When you print images at a shop, images can be printed with the date if you ask them to do so.

Others

The lens gets fogged.

- Moisture condensation has occurred. Turn off the camera and leave it for about 1 hour before using it (page 200).

The message “Set Area/Date/Time.” appears when you turn on the camera.

- The camera has been left unused for some time with a low battery or no battery pack. Charge the battery pack and set the date again (pages 27, 201). If the date setting is lost every time the battery pack is charged, consult your dealer or local authorized service facility.

The number of recordable images does not decrease or decreases 2 at a time.

- This is because the compression rate and the image size after compression change depending on the image when you shoot a JPEG image (page 157).

The setting is reset without performing the resetting operation.

- The battery pack was removed while the power switch was set to ON. When removing the battery pack, make sure the camera is turned off and the access lamp is not lit (pages 17, 21).

The camera does not work properly.

- Turn off the camera. Remove the battery pack and insert it again. If the camera is warm, remove the battery pack, and allow it to cool down before trying this corrective procedure.
- If an AC Adaptor (sold separately) is used, disconnect the power plug. Connect the power plug and turn on the camera again. If the camera does not work after performing these steps, consult your Sony dealer or local authorized Sony service facility.

appears on the screen.

- The SteadyShot function does not work. You can continue to shoot but the SteadyShot function will not work. Turn the camera off and on. If the problem persists, consult your Sony dealer or local authorized Sony service facility.

"--E-" appears on the screen.

- Remove the memory card, and insert it again. If the problem persists even after performing this procedure, format the memory card.

Warning messages

If the following messages appear, follow the instructions below.

Set Area/Date/Time.

- Set the area, date, and time. If you have not used the camera for a long time, charge the internal rechargeable battery (pages 27, 201).

Unable to use memory card. Format?

- The memory card was formatted on a computer and the file format was modified.
  Select [Enter] to format the memory card. You can use the memory card again, but all previous data in the memory card will be erased. It may take some time to finish formatting. If the message still appears, change the memory card.

Memory Card Error

- An incompatible memory card is inserted or the format has failed.

Reinsert memory card.

- The inserted memory card cannot be used in your camera.
- The memory card is damaged.
- The terminal section of the memory card is dirty.

Memory card locked.

- You are using a memory card with a write-protect switch, and the switch is set to the LOCK position. Set the switch to the recording position.

Processing…

- Displaying when Long exposure noise reduction or high ISO noise reduction will be performed for the same amount of time that the shutter was open. You cannot do any further shooting during this reduction.

Unable to display.

- Images recorded with other cameras or images modified with a computer may not be displayed.

Check that a lens is mounted. For an unsupported lens, set "Release w/o Lens" in the menu to "Enable".

- The lens is not attached properly, or the lens is not attached.
- When attaching the camera to an astronomical telescope or similar device, set [Release w/o Lens] to [Enable].

Unable to print.

- You tried to mark RAW images with a DPOF mark.

Internal temp. high. Allow it to cool.

- The camera has become hot because you have been shooting continuously.
  Turn the power off. Allow the camera to cool and wait until the camera is ready to shoot again.

- Because you have been recording for a long time, the temperature inside the camera has increased to an unacceptable level. Stop recording.

Recording is unavailable in this movie format.

- Set [File Format] to [MP4].

- The number of images exceeds that for which date management in a database file by the camera is possible.

- Unable to register to the database file. Import all the images to a computer using “PlayMemories Home” and recover the memory card.

Camera Error. Turn power off then on.
System Error

- Turn the power off, remove the battery pack or lens, then reinsert or reattach it. If the message appears frequently, consult your dealer or local authorized service facility.

Image Database File error. Recover?

- You cannot record or play back AVCHD movies because the Image Database File is damaged. Follow the on-screen instructions to recover data.

Unable to magnify.
Unable to rotate image.

- Images recorded with other cameras may not be magnified or rotated.

Cannot create more folders.

- A folder with a name beginning with “999” exists on the memory card. You cannot create any folders if this is the case.

Precautions

Do not use/store the camera in the following places

- In an extremely hot, dry or humid place
  In places such as in a car parked in the sun, the camera body may become deformed and this may cause a malfunction.
- Under direct sunlight or near a heater
  The camera body may become discolored or deformed, and this may cause a malfunction.
- In a location subject to rocking vibration
- Near a strong magnetic field
- In sandy or dusty places
  Be careful not to let sand or dust get into the camera. This may cause the camera to malfunction, and in some cases this malfunction cannot be repaired.
- Humid places
  These may cause the growth of mold on the lens.

On storing

Be sure to attach the front lens cap or body cap when not using the camera. When attaching the body cap, remove all the dust from the cap before placing it on the camera. When you purchase the DT 18-55mm F3.5-5.6 SAM II Lens Kit, purchase the Rear Lens Cap ALC-R55 also.

Care

The surface of the LCD screen has a coating that may peel off if scratched. Please note the following points for handling and care.

- Grease or hand cream left on the LCD screen by your hands may dissolve the coating. If any grease or cream gets on the LCD screen, wipe it off immediately.
- Wiping forcefully with tissue paper or other materials may damage the coating.
- Before wiping dirt, dust the dirt or sand off in advance using a blower, etc.
- When wiping off dirt, wipe gently with a soft cloth, such as a cloth for cleaning glasses.

On operating temperatures

Your camera is designed for use in temperatures between 0°C and 40°C (32°F and 104°F). We do not recommend shooting in extremely cold or hot places that exceed this range.

On moisture condensation

If the camera is moved directly from a cold to a warm location, moisture may condense inside or outside the camera. This moisture condensation may cause a malfunction of the camera.

How to prevent moisture condensation

When moving the camera from a cold place to a warm place, seal the camera in a plastic bag and allow it to adapt to conditions at the new location for about 1 hour.

If moisture condensation occurs

Turn off the camera and wait for about an hour for the moisture to evaporate. Note that if you attempt to shoot with moisture remaining inside the lens, you will be unable to record clear images.

On the internal rechargeable battery

This camera has an internal rechargeable battery for maintaining the date and time and other settings regardless of whether the power is on or off, or whether the battery pack is charged or discharged.
This rechargeable battery is continually charged as long as you are using the camera. However, if you use the camera for only short periods, it gradually discharges. If you do not use the camera at all for about 3 months, it becomes completely discharged. In this case, be sure to charge this rechargeable battery before using the camera.

However, even if this rechargeable battery is not charged, you can still use the camera as long as you do not record the date and time. If the camera resets the settings to the defaults each time you charge the battery, the internal rechargeable battery may be dead. Consult your Sony dealer or local authorized Sony service facility.

How to charge the internal rechargeable battery

Insert a charged battery pack in the camera, or connect the camera to a wall outlet (wall socket) using the AC Adaptor (sold separately), and leave the camera for 24 hours or more with the power off.

Using the lenses and accessories

We recommend that you use Sony lenses/accessories* designed to suit the characteristics of this camera. Using the products of other manufacturers may cause the camera not to operate to its capability, or result in accidents and malfunctions of the camera.

* Including Konica Minolta products

Memory cards

Do not attach a label, etc. to a memory card or a card adaptor. Doing so may cause a malfunction.

Notes on disposal or transfer of the camera

For the protection of personal information, perform the following operations when you dispose of or transfer the camera.

- [Initialize] → [Reset Default] (page 170)
- [Face Registration] → [Delete All] (page 119)

On recording/playback

- When you use a memory card with this camera for the first time, we recommend to format the card using the camera for stable performance of the memory card before shooting.
  Note that formatting permanently erases all data on the memory card, and is unrecoverable. Save important data on a computer, etc.
- If you repeatedly record/delete images, fragmentation of data may occur on the memory card. Movies may not be able to be saved or recorded. If this happens, save your images to a computer or other storage location, and then format the memory card (page 166).
- Before you record one-time events, make a trial recording to make sure that the camera is working correctly.
- This camera is neither dust-proof, splash-proof, nor water-proof.
- Do not look at the sun or a strong light through an unattached lens or the viewfinder. This may cause irrecoverable damage to your eyes. It may also cause a malfunction of your camera.
- Do not use the camera near a place that generates strong radio waves or emits radiation. The camera may not be able to record or play back properly.
- Using the camera in sandy or dusty place may cause malfunctions.
- If moisture condensation occurs, remove it before using the camera (page 201).
- Do not shake or strike the camera. In addition to malfunctions and an inability to record images, this may render the memory card unusable, or cause image data breakdown, damage or loss.
- Clean the flash surface with a soft cloth or similar material before use. The heat of flash emission may cause dirt on the flash surface to emit smoke or burned.
- Keep the camera, supplied accessories, etc., out of the reach of children. A memory card, etc., may be swallowed. If this happens, consult a doctor immediately.

Using your camera abroad — Power sources

You can use your camera, the battery charger and the AC-PW10AM AC Adaptor (sold separately) in any country or region where the power supply is within 100 V to 240 V AC, 50/60 Hz.

Notes

- Do not use an electronic transformer (travel converter), as this may cause a malfunction.

On TV color systems

When you view images on a TV screen, the camera and TV must use the same TV color system. Check the color TV system for the country or region where you are using the camera.

NTSC system (1080 60i)

Bahama Islands, Bolivia, Canada, Central America, Chile, Colombia, Ecuador, Jamaica, Japan, Korea, Mexico, Peru, Surinam, Taiwan, the Philippines, the U.S.A., Venezuela, etc.

PAL system (1080 50i)

Australia, Austria, Belgium, China, Croatia, Czech Republic, Denmark, Finland, Germany, Holland, Hong Kong, Hungary, Indonesia, Italy, Kuwait, Malaysia, New Zealand, Norway, Poland, Portugal, Rumania, Singapore, Slovak Republic, Spain, Sweden, Switzerland, Thailand, Turkey, United Kingdom, Viet Nam, etc.

PAL-M system (1080 50i)

Brazil

PAL-N system (1080 50i)

Argentina, Paraguay, Uruguay

SECAM system (1080 50i)

Bulgaria, France, Greece, Guiana, Iran, Iraq, Monaco, Russia, Ukraine, etc.

AVCHD format

The AVCHD format is a high definition digital video camera format used to record a high definition (HD) signal of either the 1080i specification*1 or the 720p specification*2 using efficient data compression coding technology. The MPEG-4 AVC/H.264 format is adopted to compress video data, and the Dolby Digital or Linear PCM system is used to compress audio data.
The MPEG-4 AVC/H.264 format is capable of compressing images at higher efficiency than that of the conventional image compressing format. The MPEG-4 AVC/H.264 format enables a high definition video signal shot on a digital video camera recorder to be recorded on 8 cm DVD discs, hard disk drive, flash memory, memory card, etc.

Recording and playback on your camera

Based on the AVCHD format, your camera records with the high definition image quality (HD) mentioned below.
Video signal*3:

1080 60i-compatible device
MPEG-4 AVC/H.264 1920 × 1080/60i, 1920 × 1080/24p

1080 50i-compatible device
MPEG-4 AVC/H.264 1920 × 1080/50i, 1920 × 1080/25p

Audio signal: Dolby Digital 2ch

Recording media: Memory card

*1 1080i specification
A high definition specification that uses 1,080 effective scanning lines and the interlace system.

*2 720p specification
A high definition specification that uses 720 effective scanning lines and the progressive system.

*3 Data recorded in AVCHD format other than the above mentioned cannot be played on your camera.

Memory cards

Notes on using memory cards

- Do not strike, bend or drop the memory card.
- Do not use or store the memory card under the following conditions:
  – Locations with high temperatures, such as in a car parked in the sun.
  – Locations exposed to direct sunlight.
  – Humid locations or locations with corrosive substances present.
- The memory card may be hot after it has been used for a long time. Be careful when you handle it.
- When the access lamp is lit, do not remove the memory card or the battery pack, or turn off the power. The data may be corrupted.
- Data may be damaged if you place the memory card near strongly-magnetized materials or use the memory card in a static-prone or electrically noisy environment.
- We recommend backing up important data, such as to a hard disk of a computer.
- When you carry or store the memory card, put it in the case supplied with it.
- Do not expose the memory card to water.
- Do not touch the terminal section of the memory card with your hand or a metal object.
- When the write-protect switch of a memory card is set to the LOCK position, you cannot perform operations such as recording or deleting images.
- Memory cards formatted on a computer are not guaranteed to operate with this camera. Be sure to format memory cards using the camera.
- Data read/write speeds differ depending on the combination of memory card and equipment used.
- Do not press down hard when you write on the memo area.
- Do not attach a label to the memory cards themselves.
- Do not disassemble or modify the memory cards.
- Do not leave memory cards within the reach of small children. They might accidentally swallow them.

Notes on the “Memory Stick” media used with the camera

The types of “Memory Stick” media that can be used with this camera are as follows. However, proper operation cannot be guaranteed for all “Memory Stick XC-HG Duo” media and “Memory Stick PRO Duo” media functions.

“Memory Stick XC-HG Duo” media*1*2
“Memory Stick PRO Duo” media*1*2*3
“Memory Stick PRO-HG Duo” media*1*2

Compatible with your camera

“Memory Stick Duo” media

Not compatible with your camera

“Memory Stick” media and “Memory Stick PRO” media

Not compatible with your camera

*1 This is equipped with the MagicGate function. MagicGate is a copyrighted protection technology that uses encryption technology. Data recording/playback that requires MagicGate functions cannot be performed with this camera.
*2 Supports high-speed data transfer using a parallel interface.
*3 When using “Memory Stick PRO Duo” media to record movies, only those marked with Mark2 can be used.

Notes on using “Memory Stick Micro” media (sold separately)

- This product is compatible with “Memory Stick Micro” media (“M2”). “M2” is an abbreviation for “Memory Stick Micro” media.
- To use a “Memory Stick Micro” media with the camera, be sure to insert the “Memory Stick Micro” media into an “M2” Adaptor as large as Duo size. If you insert a “Memory Stick Micro” media into the camera without an “M2” Adaptor as large as Duo size, you might not be able to remove it from the camera.
- Do not leave the “Memory Stick Micro” media within the reach of small children. They might accidentally swallow it.

Battery pack/ Battery charger

- The charging time differs depending on the remaining capacity of the battery pack or charging conditions.
- We recommend charging the battery pack at an ambient temperature between 10°C and 30°C (50°F and 86°F). You may not be able to efficiently charge the battery pack outside of this temperature range.
- Connect the battery charger to the nearest wall outlet (wall socket).
- Do not try to charge the battery pack again right after it has been charged, or when it has not been used after being charged. Doing so will affect the performance of the battery pack.
- Do not charge any battery pack other than the "InfoLITHIUM" M series battery pack in the battery charger (supplied) with your camera. Batteries other than the specified kind may leak, overheat, or explode if you attempt to charge them, posing a risk of injury from electrocution and/or burns.
- When the CHARGE lamp flashes, this may indicate a battery error or that a battery pack other than the specified type has been installed. Check that the battery pack is the specified type. If the battery pack is the specified type, remove the battery pack, replace it with a new or different one and check that the battery charger is operating correctly. If the battery charger operates correctly, a battery error may have occurred.
- If the battery charger is dirty, charging may not be performed successfully. Clean the battery charger with a dry cloth, etc.

Notes on using the battery pack

- Use only an NP-FM500H battery pack. Note that the NP-FM55H, NP-FM50 and NP-FM30 cannot be used.
- The displayed battery level may not be correct under certain circumstances.
- Do not expose the battery pack to water. The battery pack is not water-resistant.
- Do not leave the battery pack in extremely hot places, such as in a car or under direct sunlight.

Effective use of the battery pack

- Battery performance decreases in low-temperature environments. This means that the time the battery pack can be used is shorter in cold places and the speed of continuous shooting slows down. We recommend that you put the battery pack in a pocket close to your body to warm it up, and insert it in your camera immediately before you start shooting.
- The battery pack will run out quickly if you use the flash frequently, use continuous shooting often, turn the camera on and off frequently, or make the LCD screen brighter.

Battery life

- The battery life is limited. Battery capacity decreases little by little as you use it more and more, and as time passes. If the battery operating time seems considerably shortened, a probable cause is that the battery pack has reached the end of its life. Buy a new battery pack.
- The battery life varies according to how it is stored and the operating conditions and environment in which each battery pack is used.

How to store the battery pack

Store the battery pack in a dry, cool place after removing it from the camera. Even if you do not use the camera for an extended period of time, charge the battery pack and fully use it up at least once a year to prolong the battery life.

License

Notes on the License

Software provided in the camera are based on license agreements with the copyright owners. Based on requests by the owners of copyright of these software applications, we have an obligation to inform you of the following. Please read the following sections.
Licenses (in English) are recorded in the internal memory of your camera. Establish a Mass Storage connection between the camera and a computer to read licenses in the “PMHOME” - “LICENSE” folder.

THIS PRODUCT IS LICENSED UNDER THE AVC PATENT PORTFOLIO LICENSE FOR THE PERSONAL USE OF A CONSUMER OR OTHER USES IN WHICH IT DOES NOT RECEIVE REMUNERATION TO
(i) ENCODE VIDEO IN COMPLIANCE WITH THE AVC STANDARD (“AVC VIDEO”) AND/OR
(ii) DECODE AVC VIDEO THAT WAS ENCODED BY A CONSUMER ENGAGED IN A PERSONAL ACTIVITY AND/OR WAS OBTAINED FROM A VIDEO PROVIDER LICENSED TO PROVIDE AVC VIDEO.
NO LICENSE IS GRANTED OR SHALL BE IMPLIED FOR ANY OTHER USE.
ADDITIONAL INFORMATION MAY BE OBTAINED FROM MPEG LA, L.L.C.
SEE
HTTP://WWW.MPEGLA.COM

On GNU GPL/LGPL applied software

Software that is eligible for the following GNU General Public License (hereinafter referred to as “GPL”) or GNU Lesser General Public License (hereinafter referred to as “LGPL”) are included in the camera.
This informs you that you have a right to have access to, modify, and redistribute source code for these software programs under the conditions of the supplied GPL/LGPL.
Source code is provided on the web. Use the following URL to download it.
http://www.sony.net/Products/Linux/
We would prefer you do not contact us about the contents of source code.

Licenses (in English) are recorded in the internal memory of your camera. Establish a Mass Storage connection between the camera and a computer to read licenses in the “PMHOME” - “LICENSE” folder.

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